DISTRIBUTION AGE

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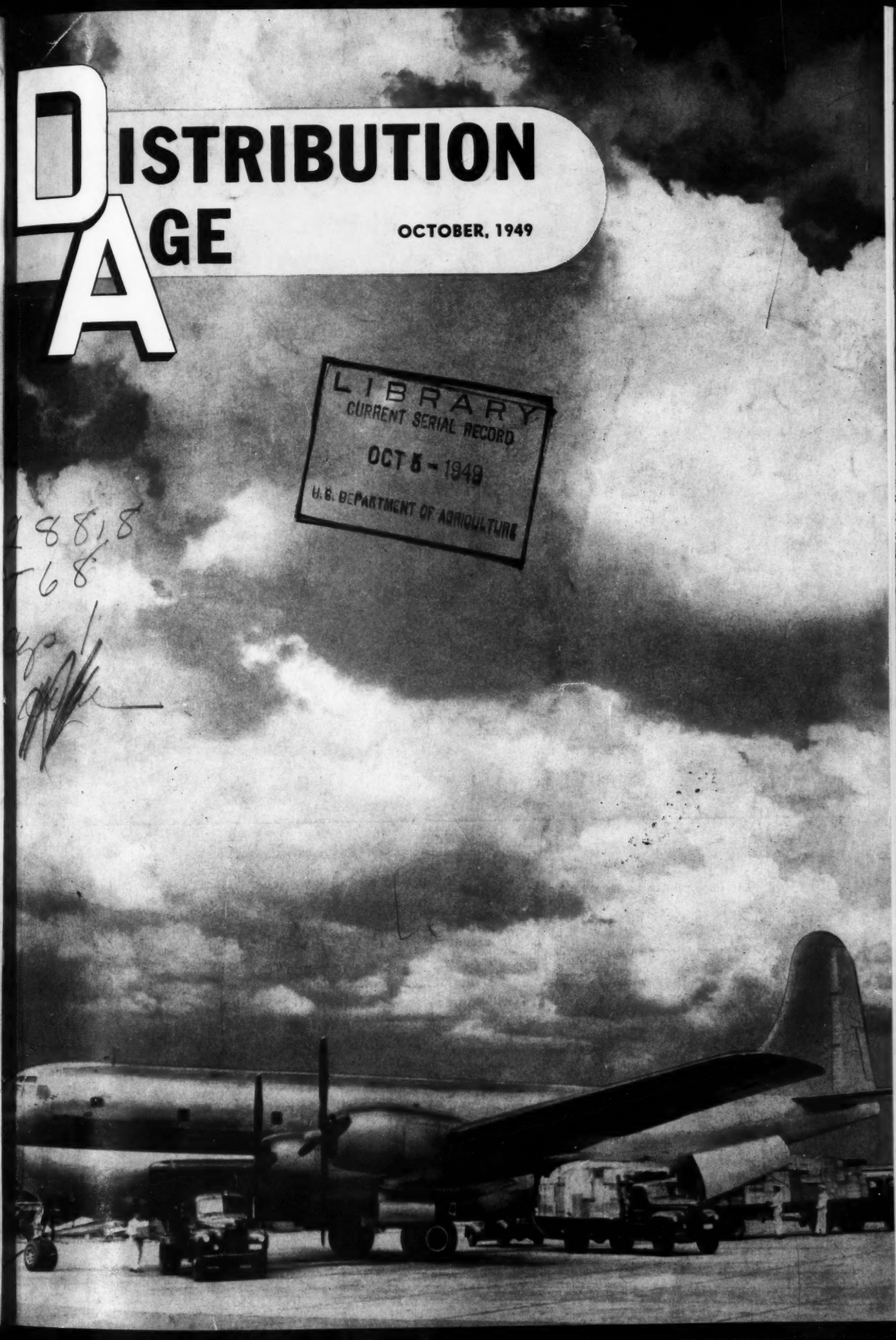

every handling job is easier with TOWMOTOR MH!

1-LOW STEP-UP 2-WIDE SEAT
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—Towmotor Efficiency Features

Your driver is *seated* at his important task . . . with plenty of leg room, seat room and "see" room to do a more efficient, faster, better job.

Another development pioneered by Towmotor is the exclusive design which permits greater freedom and ease of operation for the fork lift truck operator—increasing his alertness and efficiency in the safe handling of loads up to 15,000 lbs. Compare Towmotor with any other lift truck and you will see why Towmotor's outstanding features make every **M**ass **H**andling job easier, faster, safer. Write for a copy of the "Operators Guide." Towmotor Corporation, Div. 19, 1226 E. 152nd St., Cleveland 10, Ohio. Representatives in all Principal Cities in U. S. and Canada.

TOWMOTOR
THE ONE-MAN-GANG®

FORK LIFT TRUCKS and TRACTORS

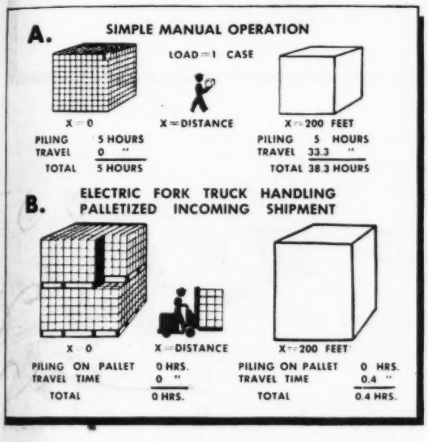
RECEIVING • PROCESSING • STORAGE • DISTRIBUTION

HOW A *BAKER TRUCK* CAN CUT A $38.33 Handling Cost to 59¢

Most material handling problems consist principally of two fundamental operations—(1) Transportation, and (2) Piling. The following simple example shows how a handling operation, costing $38.33 by hand methods, can be cut to 59.6¢ by the use of BAKER Fork Trucks and pallets.

THE PROBLEM—To move a pile of 1000 cases a distance of 200 feet and re-pile.

This problem is obviously oversimplified. In practice these operations are repeated many times and with many variations—but the ratio of savings remains essentially the same.



COST BY HAND METHODS

1. **Transporting**—Practical Load—1 case. Estimated walking speed 200 ft. per minute. Time—1000 round trips, 2000 minutes or 33.33 hours. Labor cost at $1.00 per hour $33.33
2. **Piling**—Estimated rate—200 cases per hour. Total time—1000 cases—5 hours. Labor cost at $1.00 per hour 5.00

TOTAL COST—HAND METHODS **$38.33**

COST WITH *BAKER* FORK TRUCK AND PALLETS

1. **Labor Cost**—Pallet load—50 cases. Time per round trip with truck 1.2 minutes (includes picking up pallet load, travel, tiering, and turning around.) Total time—20 round trips, 24 minutes or .4 hours. Labor Cost (Operator at $1.00 per hour) ..... .40
2. **Truck Cost**—Annual cost—owning and operating Fork Truck and Pallets $980.00. Per hr. cost (2000 hrs. per year) 49¢. Cost for .4 hours ..... .196

TOTAL COST—WITH TRUCK ..... **.596**

TOTAL SAVINGS—$37.73, or 98.5%.

How the cost of Baker Fork Truck-Pallet operation compares with still other handling methods is shown in the charts 1 and 2 at left.

"A" and "F" represent methods discussed above.

"B" and "C" show costs of hand trucking, B with 2-wheel truck—5 cases per load; C with 4-wheel truck—20 cases per load.

"D" represents the conveyor method, where the only labor costs are for piling.

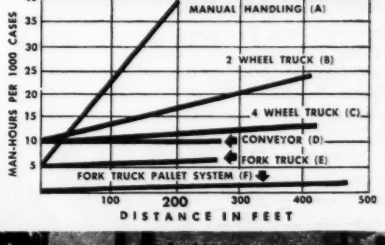
"E" represents costs for Baker Fork Truck operation where cases are not originally palletized.

In Chart 2, the starting point of each line indicates man-hours required for piling, and the path of the line shows man-hours for increasing distances. Obviously, the greater the distance, the greater the savings with BAKER Trucks.

CHART 1

CASE	LABOR COST	TRUCK COST	TOTAL COST PER 1000 PIECES
A (MANUAL)	$38.30		$38.30
B (2 WHEEL HAND TRUCK)	$16.60		$16.60
C (4 WHEEL HAND TRUCK)	$11.60		$11.60
D (CONVEYOR)	$10.00		$10.00
E (FORK TRUCK)	$5.40	.196	$5.59
F (PALLET-FORK TRUCK SYSTEM)	.40	.196	.59

CHART 2



Let a Baker Material Handling engineer show you how similar savings can be made in your plant.

BAKER INDUSTRIAL TRUCK DIVISION
of The Baker-Raulang Company
1216 WEST 80TH STREET • CLEVELAND, OHIO
In Canada: Railway and Power Engineering Corporation, Ltd.

Baker INDUSTRIAL TRUCKS

ALONG THE WAY...OF *TWA*

PENICILLIN BY THE TON...

PHARMACEUTICAL MANUFACTURERS ARE BIG USERS OF ***TWA*** (TRANS WORLD AIRLINE) AIR CARGO SERVICE. RECENT 6,096-POUND CONSIGNMENT OF PENICILLIN JAMMED TERRE HAUTE, IND., AIRPORT BUILDING...QUICKLY DEPARTED ON ***TWA*** FLIGHTS. STREPTOMYCIN IS ANOTHER FREQUENT HEAVY CARGO. IF YOU'RE SHIPPING PHARMACEUTICALS... OR ANY OTHER MERCHANDISE...ANYWHERE IN U.S.A. OR OVERSEAS...GET ***TWA*** RATES AT ONCE. THEY'RE LOWEST IN ***TWA*** HISTORY.

...OR A SIX-OUNCE CHALICE...

NOT ALL ***TWA*** AIR CARGO SHIPMENTS ARE BIG, BULKY TONNAGE. FOR INSTANCE...DUBLIN METALWARE MANUFACTURER SHIPPED 6-OZ. CHALICE VIA ***TWA*** AIR CARGO TO CUSTOMER IN U.S. SPEED AND HANDLING OF SHIPMENT SO IMPRESSED THE PURCHASER THAT (CAME VACATION TIME) HE VISITED IRELAND.... ROUND-TRIPPING VIA ***TWA***!

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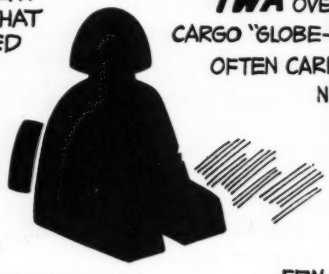
TWA OVERSEAS AIR CARGO "GLOBE-FREIGHTERS" OFTEN CARRY NEWSREELS... X-RAY FILMS... FLASH BULBS AND OTHER PHOTO GOODS. WHETHER "RUSH" SHIPMENT OF TONS OR PACKAGE OF FEW OUNCES... ***TWA*** AIR CARGO REACHES DESTINATIONS SAFELY, QUICKLY LOW RATES INTEREST SHIPPERS EVERYWHERE.

"CAIRO"



SIGN OF THE SPHINX STAMPED ON SHIPPING LABELS (BY ***TWA***) EASILY, QUICKLY IDENTIFIES SHIPMENTS TO EGYPTIAN PORT. ALL ***TWA*** OVERSEAS PORTS HAVE SYMBOLS TO HELP SPEED HANDLING EN ROUTE.

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Look it up today. Call TWA (or your freight forwarder). TWA Air Cargo service and connecting airlines practically cover the earth. Use air parcel post or air express for small packages. Remember, air mail is first received . . . first answered.

FRONT COVER

A Boeing Strato Freighter is being loaded at an airfield. This operation, involving handling, trucking and other distribution phases, and particularly their integration around air transportation, illustrates both motaircargo and motairhandling. Photo by Ewing Galloway.

DISTRIBUTION AGE

The Magazine That Integrates All Phases Of Distribution

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H. S. WEBSTER, JR.
Publisher and Editor

THEODORE WHITMAN
Managing Editor

GEORGE POST
Assistant Manager

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Consultants: Materials Handling, Matthew W. Potts; Traffic, Henry G. Elwell; Air Cargo, John H. Frederick; Legal, Leo T. Parker; Packing, C. L. Saperstein.

Special Correspondents: Arnold Kruckman, Washington, D. C.; Fred Merish, New York; Randall R. Howard, Chicago; R. Raymond Kay, Los Angeles; H. F. Reves, Detroit.

Editorial Assistant: Donald Atran.

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Advertising Staff

Central Western Mgr.
A. H. Ringwalt, 360 N. Michigan Ave., Chicago 1, Ill. FRanklin 2-0829

Central Representative
S. C. Williams, 1836 Euclid Ave. Cleveland 15, Ohio. Main 6374

Western Representatives
Roy M. McDonald & Co., 564 Market St., San Francisco 4, Cal., Yukon 6-0503; 639 So. Wilton Place, Los Angeles 5, Cal., Drexel 2590; Terminal Sales Bldg., Seattle 1, Wash., Maine 3860.

Special Representative
Duncan P. Macpherson, 700 S. Washington Sq., Philadelphia 6, Pa. LOmbard 3-9982.

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VOL. 48, NO. 10 **October, 1949**

SPECIAL FEATURES

Motaircargo—Operation Airfreight ..... Paul W. Pate 17
- Airports 18
- Terminals 19
- Materials Handling Equipment 20
- Packing for Motaircargo 22
- Flight Equipment 24
- Traffic Control ..... Erwin C. Nye 26
- Future Motaircargo ..... John H. Frederick 29

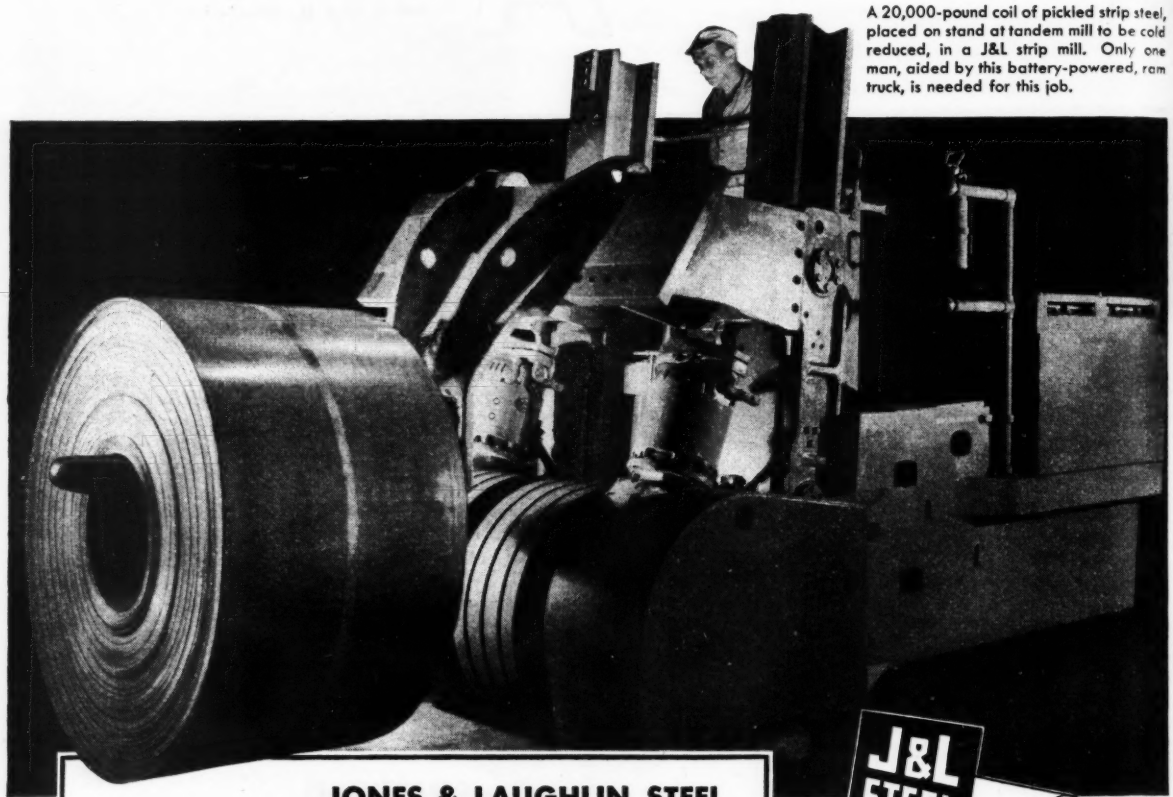
It's Happened Again 32
Frozen Foods in Cold Storage—Blow or Blessing? ..... D. Oliphant Haynes 38
Floor-Load Capacity and Power Trucks ..... Charles S. Schroeder 40
How to Distribute ..... Arthur M. Marshall 41
Excise Tax—a Symposium 44
Decentralization Hits Big Port Cities ..... Everett Starr 46
What's All the Shoutin' For? 48
What About Pallet Pools? ..... W. B. McClelland 48
Operation Airfreight ..... George T. Cussen 54
The Magic Carpet ..... Henry G. Elwell 56
Pessimism Disappearing 62

DEPARTMENTS

Editorial Comment 13
Letters to the Editor 14
Books and Catalogues 67
DA Next Month 67
Distribution Activities 72
New Products and Procedures 74
Getting Down to Cases ..... Leo T. Parker 76
Coming Events 80
Obituaries 80

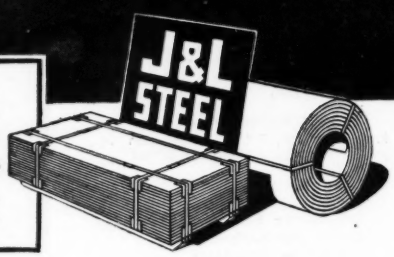
STATEMENT OF POLICY . . . Our policy is based on the premise that distribution embraces all activities incident to the movement of goods in commerce. If distribution is to be made more efficient and economical, we believe business management must consider more than sales, because more than sales are involved. Marketing, while vital, is one phase only of distribution; seven other practical activities not only are necessary but condition marketing costs. Most commodities require handling, packing, transportation, warehousing, financing, insurance, and service and maintenance of one kind or another before, during or after marketing. We regard all of those activities as essential parts of distribution. Hence, the policy of DISTRIBUTION AGE is to give its readers sound ideas and factual information on methods and practices that will help them to improve and simplify their operations and to standardize and reduce their costs in all phases of distribution.

27¢ per truck-hour covers *all powering costs* for these 15-ton electric trucks



A 20,000-pound coil of pickled strip steel, placed on stand at tandem mill to be cold reduced, in a J&L strip mill. Only one man, aided by this battery-powered, ram truck, is needed for this job.

JONES & LAUGHLIN STEEL CORPORATION FINDS BATTERY-POWERED INDUSTRIAL TRUCKS GIVE *LOW-COST* DEPENDABILITY, AROUND THE CLOCK



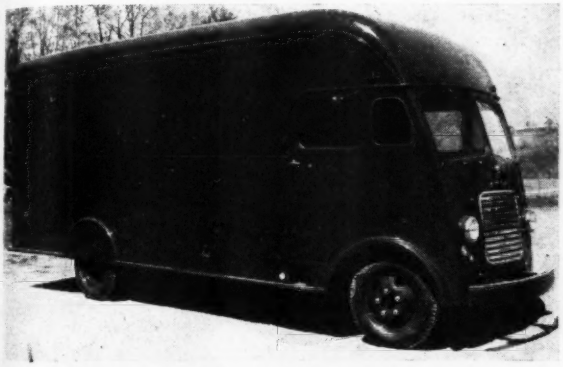
At its Second Avenue plant, Pittsburgh, Pennsylvania, J&L uses sixteen battery-powered ram and fork trucks to lift, move and place great coils of strip steel or "flats" of sheet and plate weighing up to 30,000 lbs. Introduction of electric trucks assured orderly, dependable transfer, on a 20-hour schedule, of material through the various operations such as hot strip rolling to annealing and pickling, pickling to cold rolling, with handling service for temporary storage between operations.

J&L accrues, in a special reserve account, all charges for power metered to the charging station, all labor and equipment for servicing and charging batteries, all battery replacements. Such accruals have been 27 *cents at most, per truck-hour.* This reserve has always been adequate to cover *all* cost of powering the trucks.

Another example of why cost-probing management looks at the *cost per unit moved,* rather than initial investment, in determining its purchase of handling equipment. And another reason why, more and more, "America's Top Industries Prefer *Battery-Powered* Trucks!"

THE ELECTRIC INDUSTRIAL TRUCK ASSOCIATION

3701-R NORTH BROAD STREET • PHILADELPHIA 40, PA.



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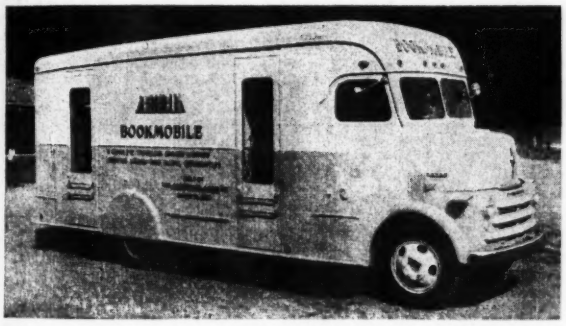
Gerstenslager design and construction methods also save money and improve operating efficiency for users of the specialized vehicles illustrated below and at right.

Meeting YOUR special van requirements is OUR specialty

Our whole organization is built around the idea of giving you exactly the style, size, and construction details which will make your van meet your individual requirements with maximum precision and maximum operating economy. Long experience and large volume have developed methods and equipment which give you these specialized advantages at moderate cost.

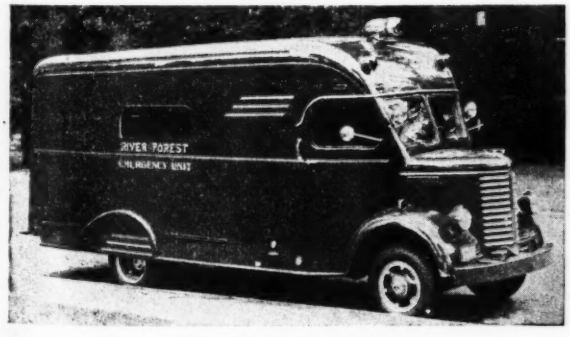


BOOKMOBILES

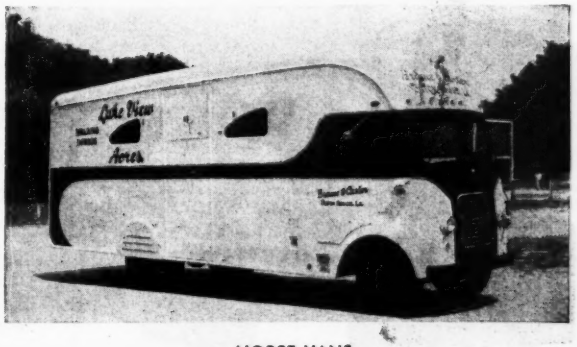
The GERSTENSLAGER COMPANY

WOOSTER, OHIO

Established 1860

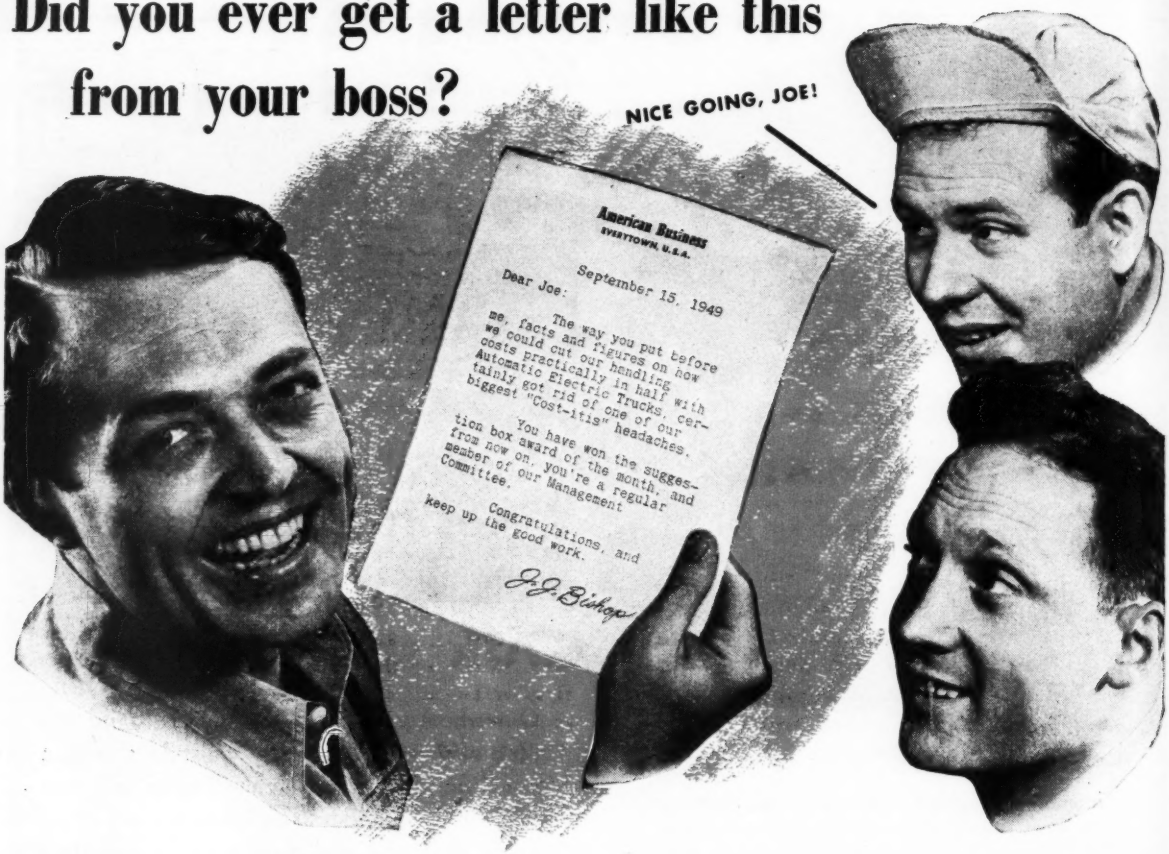


EMERGENCY RESCUE UNITS



HORSE VANS

Did you ever get a letter like this from your boss?



The pay-off for Joe...he showed the Boss how to cut handling costs in half!

Sure, with prices under pressure, sales declining, profits being squeezed, the boss is apt to say: "*Lay low on capital expenditures.*"

But if you take him at his word, especially when it comes to handling costs, you're not doing him, the business or yourself any good.

Whatever your manual handling costs are now, deduct 50%, and you'll have the cost of handling your products with Automatic Electric Trucks. Imagine what relief *that* would give your boss from his "Cost-itis" headaches.

So get yourself all the facts about these amazing electric trucks and lay them before him. With effortless, easy finger-tip control, they *lift, move* and *stack* hundreds of pounds, or tons and tons of your material so easily, a stenographer could operate them in a breeze.

Yes, these mighty giants of electric power do all the work. One man accomplishes as much as three men doing fatiguing *manual* handling. The other two can be moved to more productive, better paying jobs.

Send the coupon today . . . and when you get all the figures, you can show your boss the thousands and thousands of dollars these electric trucks are saving industry every day, and how *similar savings may be his!*

You'll be rewarded for your interest . . . and you'll be the man he will keep his eye on for the better jobs that are always coming up. Mail the coupon now, and see how fast things start looking up for you!

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ELECTRIC TRUCKS
Lighten LIFE'S LOADS

TRADE Automatic MARK
115 W. 87th St., Dept. T-9, Chicago 20, Ill.

Please send me complete money-saving facts on amazing Automatic Electric Trucks, without obligation.

Company Name.....
By.....Position.....
Street Address.....
City.....Zone.....State.....

GMC radiator grilles are as durable as they are distinctive. All 300 to 900 series grilles are frame-mounted, angle-braced and surrounded by bars of heavy, spring steel bumper stock.

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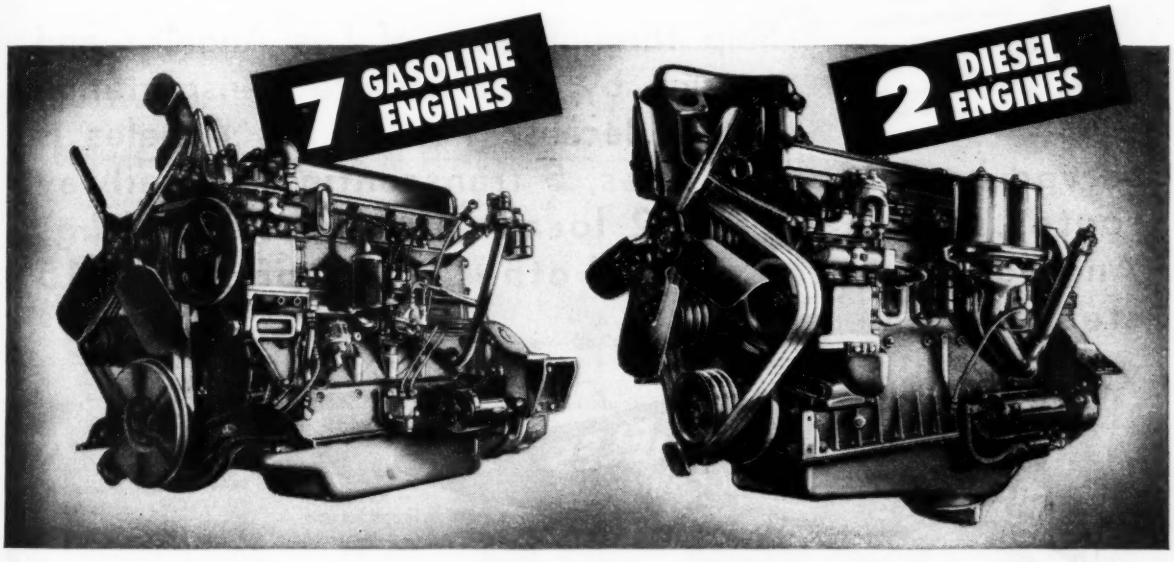
Best Engines in the Business

The increasing popularity and acceptance of GMC trucks are reflected in current registration figures which show GMC making substantial gains in new truck sales. In fact, new GMC truck registrations are the highest in the Company's history according to latest available figures.

Much of this increase can be attributed to the famous GMC truck-built engine line . . . because everyone recognizes the engine as the "heart" of any motor truck.

GMC now offers an engine range to fit every vocational requirement. Each engine, gasoline or Diesel, is the most powerful in its class with the most advanced features of design and construction ever offered by GMC. From every angle GMC truck engines are the "best in the business" . . . from every angle the best for your business.



GMC gasoline engines range from 228 to 503 cu. in. displacement and from 95 to 190 horsepower. From the smallest to the largest, they are all GMC-built . . . all of war-renowned "Army Workhorse" design.

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TRUCKS

GMC Diesel trucks are powered by famous GM 2-cycle four and six cylinder Diesel engines that are outstanding for light weight and great economy. The four develops 133 horsepower; the six provides 200.

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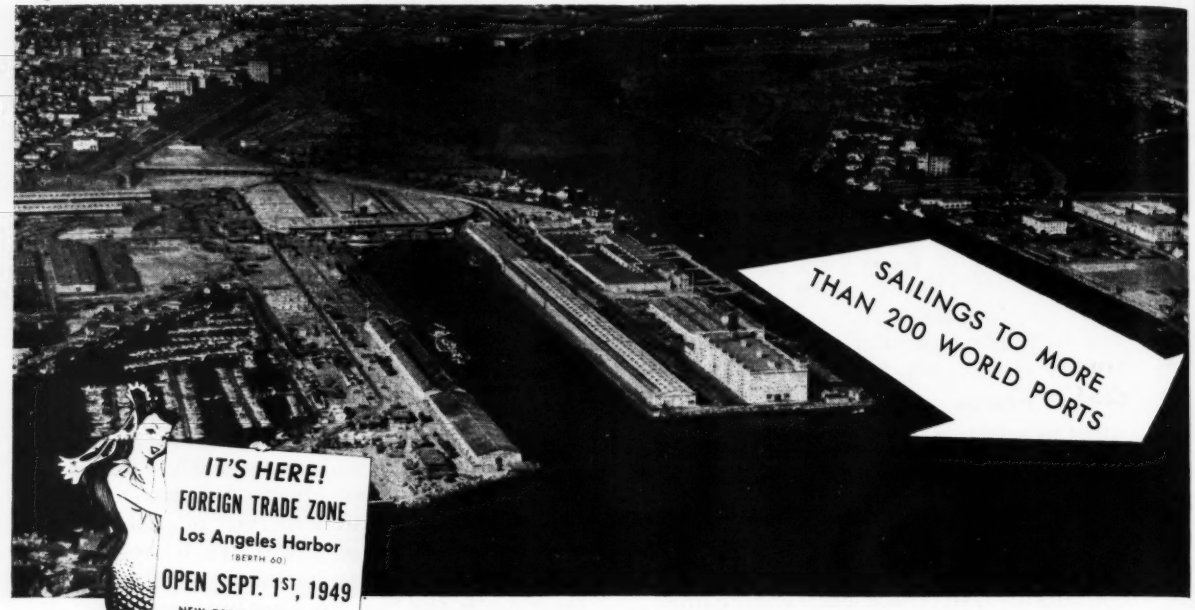

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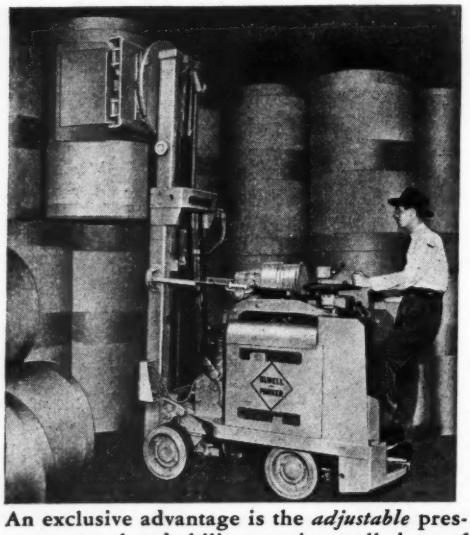
Chicago-Atlanta	$6.55	6.00
Cincinnati-Atlanta	4.55	4.90
Atlanta-New Orleans	5.05	5.12
Dallas-Atlanta	8.00	6.66
Atlanta-Miami	7.05	6.00
Cincinnati-New Orleans	8.00	6.44

Airport Pick-up and Delivery Extra If Desired



An exclusive advantage is the *adjustable* pressure control and ability to grip a roll short of the center line.

Giants' hands couldn't be more dexterous or sturdy than this new attachment now available on Elwell-Parker Trucks. It's ideal for unloading or storing paper rolls and other materials in roll form including casks, barrels, drums, etc.

This roll handler is smaller, giving the driver greater visibility; lighter, adding to truck's load capacity; and it holds a roll in a *positive* grip—so important in speeding action *safely.* Surfaces that contact the roll are rubber padded to protect the load.

NO PALLETS NEEDED. One user has saved 20% in storage space by eliminating pallets. Close, orderly stacking either vertically or horizontally, and quick pick-up from stacks are accomplished with the attachment. The Elwell-Parker Electric Company, 4110 St. Clair Avenue, Cleveland 3, Ohio.

SEND FOR DATA
mentioning type and size of roll you handle.

ELWELL-PARKER
POWER INDUSTRIAL TRUCKS
Established 1893

It's the "EXTRAS" that make this

Beechcraft a better buy!

★ **Extra speed** — The Beechcraft Bonanza achieves its high speed *without engine overload*—170 mph cruising speed at 8,000 feet using but 56% of the maximum rated take-off power. You buy a plane to *make time*. In a Beechcraft, you *get* it!

★ **Extra ruggedness** — Beechcraft Bonanza framework is stronger than conventional construction. Shock and stress tests far surpassing CAA requirements have proved the extra ruggedness of every inch of the Beechcraft Bonanza—from landing gear to cabin roof!

★ **Extra economy** — Extra low fuel consumption of 9.5 gallons per hour at cruising is part of the Beechcraft Bonanza's operating economy. Another vital "extra" is low maintenance due to freedom from engine overload. The Beechcraft Bonanza saves your money!

★ **Extra safety** — The Beechcraft A35 Bonanza has been dived under radio control at 275 mph—and pulled out unscathed at 3 G's! On the ground, the Beechcraft Bonanza's wide tread, long wheel base, and cross-braced struts defy the roughest handling, the roughest terrain.

★ **Extra performance** — No airplane yet designed can beat the high performance of the Beechcraft Bonanza—its unexcelled combination of speed, range, and fuel economy. Its flight characteristics make it one of the easiest planes in the world to handle!

★ **Extra power** — The extra margin of power in a Beechcraft Bonanza comes from aerodynamic design which requires but 56% of the engine's power at cruising. Never before has so little power been needed for such high performance by so rugged a plane!

★ **Extra range** — The extra range you get in a Beechcraft Bonanza—750 miles—makes it *real transportation*. Equipped for long distance flight, it is the most practical of all planes for business use—with a *commercial* margin of safety, speed, and range!

★ **Extra utility** — The Beechcraft Bonanza is a business plane, engineered for extra usefulness as a business vehicle. It can be operated the year around. It can get into small, unpaved landing fields as well as modernized airports. It is ready to go—365 days a year!

★ **Extra comfort** — From the moment you step (not climb!) into a Beechcraft Bonanza through its wide, auto-type door and settle yourself in its uncrowded 4-place interior, you're conscious of superb comfort. Its sound-proofing is the standard of comparison!

★ **Extra luxury** — Skilled design and placement, with superb interior appointments, make the Beechcraft Bonanza an aerial limousine. You'll lean back and relax and enjoy air travel as never before! Its only rival for sheer luxury is the multi-engined airliner itself!

● These are only the highlights among hundreds of reasons why the Beechcraft Bonanza is a better buy! *See* it today! A note on your company letterhead will bring illustrated brochures describing the Beechcraft Bonanza's many *extra* advantages. Write to Beech Aircraft Corporation, Wichita, Kansas, U. S. A.

Compare these performance features

- Top speed, 184 mph
- Cruising speed, 170 mph
- Range, 750 miles
- Service ceiling, 17,100 feet
- Fuel economy, 9½ gal. per hour

Compare these comfort features

- Exclusive retractable step
- Limousine entrance
- Insulated, sound-proofed cabin
- Quickly removable rear seat
- Luggage compartment accessible two ways

Beechcraft

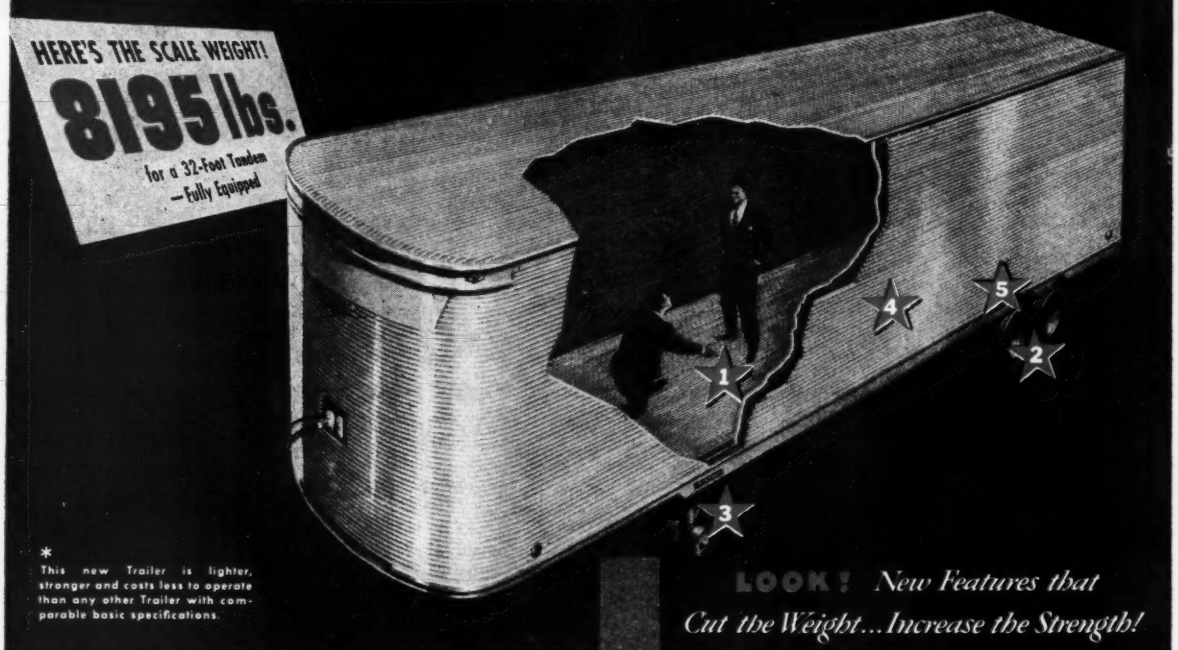
BONANZA

MODEL A35

BEECHCRAFTS ARE THE AIR FLEET OF AMERICAN BUSINESS

Here it is! LIGHTEST, STRONGEST LOWEST-COST TRAILER* *in the world!*

The sensational new FRUEHAUF STAINLESS STEEL *out-hauls...out-earns...out-lasts them all!*



* This new Trailer is lighter, stronger and costs less to operate than any other Trailer with comparable basic specifications.

LOOK! *New Features that Cut the Weight...Increase the Strength!*

IT'S THE NEW FRUEHAUF STAINLESS STEEL . . . an engineering triumph in Trailer-making. Amazing weight-savings have been accomplished in every part . . . from roof to road. And yet the strength has been *increased.*

Fruehauf engineers have combined stainless steel and other modern lightweight metals into the lightest, strongest Trailer in the world. Here's what that means to *you!* Greater payload capacity . . . lower maintenance and operating costs . . . longer Trailer life.

Sensationally low maintenance cost! One operator, with 385 units, reports an average repair cost of $12.85 per Trailer for 1948—less than the cost of keeping a conventional Trailer painted!

Get the facts about the new Fruehauf Stainless Steel. They're really amazing! See a Fruehauf representative . . . or write us today. The Fruehauf Trailer Company. Detroit 32—Los Angeles 11. In Canada: Weston, Ontario.

	THIS MUCH LIGHTER
1 **NEW FLOOR** — Magnesium, exclusive design. Strongest Trailer floor for its weight ever built.	Up to **800 lbs.** lighter
2 **NEW WHEELS**—Drop forged aluminum. Stronger, more rugged than steel wheels they replace.	**93½ lbs.** per axle lighter
3 **NEW SUPPORTS** with ultra light-weight features. Even stronger and easier acting than before.	**135 lbs.** lighter
4 **NEW GEAR BOXES** on Gravity-Tandem models. New design affords greater shock resistance.	**45 lbs.** lighter
5 **NEW BRAKE SHOES**—Fabricated from rolled steel. Free from usual casting defects.	**40 lbs.** per axle lighter

UP TO 5 YEARS TO PAY! **Qualified operators can have up to 5 years to pay—the best evidence you could ask for that Fruehauf's do last longer. Ask about our "pay as you earn" financing plans.**

FRUEHAUF *Trailers*

WORLD'S LARGEST BUILDERS OF TRUCK-TRAILERS

Special taxes paid by trucks last year for road building and maintenance alone equalled all the money spent by all the states for all the roads in 1946—40,000 miles of them.

Hear Harrison Wood in "This Changing World"—every Sunday Afternoon over ABC. Consult your Local Paper.

EDITORIAL COMMENT

Pioneers

OPEN a book; perhaps it is one on history. Read of the men—of Galileo, Leibnitz and Edison—who scored "firsts." Read of Gutenberg and his printing blocks; and the unknown Englishman who placed the first advertisement in April, 1647. "Great men," we muse. We thrill almost as did those giants in their moment of discovery. Great men indeed—and every one thoroughly dead.

Pick up a magazine. Some fellow named Dr. Frederick or Matthew Potts says that, if such and so is done, the air transportation industry (with the aid of more modern handling devices and proper flying equipment) will within 10 years be a peer among the other transportation industries. You shrug and turn to another page. The mildest epithet you have is "Utopian." If you're in the airplane industry, you are convinced that you're an expert, and that those fellows don't know the first thing about it. "They paint too broad a picture; generalizing again, that's all." Or you're a user of materials handling equipment and are convinced that, as of October 1, 1949, there will hereafter be nothing new under the sun. You KNOW; that's all there is to it.

But then, these men are *alive;* and it's always easier to "kick" live men than the dead. Besides, the living are scarcely to be found in books; those found therein are almost assured of proper reverence, especially if bound in half morocco.

Speaking of "firsts," we in DISTRIBUTION AGE remember—but wait one moment. Perhaps you would care to turn to the article on flight equipment. Note the illustration of the new Douglas air freighter. This ship has a high tail, front loading ramp, wide loading doors, internal hoist, ample dimensions, is given over completely to freight requirements, not of the year 1990 but the year 1950. Utopian? Of course not. Yet we foresaw this design almost a decade ago; and many an air man had stitches then at this notion.

We in DISTRIBUTION AGE had faith; not blind faith but conviction based on logic, the backing of Armed Forces engineers, and of commercial air men who were not afraid to project their imaginations several years hence. We published advanced views—and kept on publishing them.

Let's look at the record. Back in 1943, and even before, we were telling our readers, the general public, anybody we could buttonhole: "See, what we need is air freight. We need planes designed for that service . . . high tail . . . loading ramps . . . ground equipment such as trucks with elevating bodies and fork trucks and conveyors . . . we need better coordination of trucking, handling, packaging, air . . ."

(February 1943) "The tail has been raised on the Curtiss (C-76) Caravan air freighter, a definite step in the right direction, but apparently it has been designed primarily for military use. Many more improvements will have to be made in the cargo planes of the future to facilitate their speedy loading and unloading of all types of goods. . . . Do likewise in the field of materials handling equipment manufacturing, and you will not only serve the plane manufacturers but the carriers and shippers as well."

A letter to us, published May, 1943: "You are doing a very thorough and important job and you are to be complimented on your foresight in connection with air cargo. I am anxious to acquaint the Motor Carriers with our problems so that they all may be thinking about them —It is obvious to me that all airlines will work more with Motor Carriers than with the Railroads."

"According to W. W. Davies, research engineer of United Air Lines, 'Loading and unloading will be accomlished in a manner altogether different than at present. . . . (Mr. Davies recommends) larger truck bodies capable of hoisting truck bed for elevated loading.'" We featured this in June, 1943. Look in our current issue for just this type of equipment; it is now in use.

Motaircargo issues of this publication began with the October 1943 issue and have appeared annually since. Another first: MOTAIRCARGO.

From a paper read by Dr. Frederick, at the second annual air cargo meeting of the SAE: "It is unlikely that the airlines will want to go into the motor carrier business in order to supply this pick-up and delivery system." Was he right? Yes!

Back in 1944 we were asked by a maker of air conditioning equipment whether a good market existed for his product in trucks. Among other things we said: "We have been recommending for nearly three years that the highway and air carriers cooperate. . ."

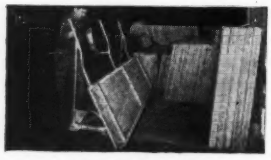
In July of that year, Jerry Martin, University of Kansas, and Dr. Frederick discussed winches and loading ramps. "Every effort should be made to make possible loading and unloading (directly) from present commercial type trucks."

So much for the record — rather, a fraction of the record. And this brings up the matter of risks. Do publishers, editors and all that great host who are servants of the printed word, do they think of the risks of publishing what they believe to be the truth, of publishing what they are dead certain will prove out five and 10 years hence? Then why should investors think in terms of "risk capital"? Capital is invested after much research, engineering, preliminary surveys, and what not; all that is humanly possible is done to reduce the risk factor to zero. The greater risk is in not having confidence in men—living men—who have experience and vision. Fortunately, history shows that investors and entrepreneurs too had vision, and had faith. In financing the Goodyears and Fords and Edisons, they took the lesser risk.

Taking the lesser risk, pioneering, is old hat for capital in the production field. It is in distribution that private capital has still in large measure to take the lesser risk. Letting the government, as in waterways, do the pioneering, and then hoping to reap the benefits therefrom is not the way out for distribution; ask the experts about the pork-barreling, the politics and all the rest of it. The way out is for private capital to pioneer, in air as well as elsewhere in the distribution sphere. When capital ventures, *there* will geniuses and men with vision venture too.

ROL-AWAY
Specialized
HAND TRUCKS

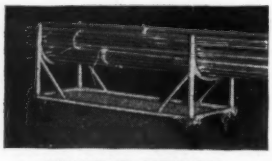
Cover the Field in Materials Handling



MODEL A

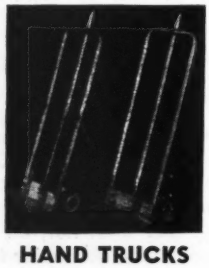
An all aluminum one-man truck for sheet metal, plywood, glass, case goods and other flat materials. 2 men and 1 Rol-Away truck handled 60,000 lbs. of aluminum sheeting in 2 hours and 5 minutes.

MODEL B for all hand use
MODEL J for heavy plate glass



TUBING TRUCK

An all-aluminum truck designed for tubing, pipe, rods and other long, thin loads. 4 wheels, rolls in any direction—can be operated by one man.



HAND TRUCKS

Rol-Away has three new models of aluminum hand trucks—12 lb. weight, 500 lb. capacities. Stair climbers on some models.

Send for folder on complete Rol-Away line

The ROL-AWAY

HONEYMAN MFG. CO.
1217 N.W. Everett Portland 9, Ore.

LETTERS to the *Editor*

To the Editor:

There has been much talk and too little action on the problem of the tremendous costs which confront industry and our railroads because of the necessity of cleaning all types of cars.

It was most encouraging to read Mr. Elwell's fine article on the subject which appeared in your May issue. Another publication gave a little different and equally good treatment to the subject in its August issue.

Consumers Company has been concerned with this car cleaning problem for some time and over a period of months have worked out some measure of relief for our local situations with those carriers who serve our plants.

Shouldering the burden of cleaning costs upon the railroads is only a partial solution to the problem however, for any increase in transportation costs carries with it the potential threat of possible additional demands for more increases in the already high level of our freight rates.

Because we believe the first approach to the problem should be made at the level where the trouble occurs, we have prepared and, I am enclosing, two messages to our customers who receive car-lot materials. The general letter is followed by the sticker which accompanies every bill we send out.

Obviously, the effort we are making needs more help than any one shipper can give. For this reason it was good to know that your publication is alive to the importance of the subject.

Any additional cooperation you can give will surely reflect to the benefit of all of us, carrier and industry alike. We need a strong railroad plant, one completely removed from any threat of government ownership. —J. M. Michaels, Traffic Manager, Consumers Co., Chicago.

The messages to which Mr. Michaels refers in his letter are printed below:

1. To Our Customers:

Despite the fact that there is a primary obligation on the part of the railroads to furnish empty cars in proper condition for loading, all producers of sand and stone have been compelled to spend many thousands of dollars annually on c l e a n i n g and coopering cars in order that their customers could get their material in good condition and with a minimum of delay. This was particularly true during the postwar years when the car shortages were most acute.

Today, however, car loadings are down, the supply of open top cars has been improved and the railroads are doing a much better job of cleaning cars before they are placed for loading. The operation of cleaning tracks is costly and the sums expended, like all other railroad costs, are reflected in the rates the carriers exact for their service. As this is written, another rate increase has been granted by the Interstate Commerce Commission.

Now that the railroads have recognized their responsibility, it is our thought that the buyers of carlot materials can make a big contribution towards an even better situation. If every consignee will make it a point to completely unload all cars and refrain from loading debris in outbound empties, the amount saved by the carriers of the country will be tremendous. Furthermore, cars will not be lost to productive service as they are when they have to go to cleaning tracks.

We are glad to report that the lines serving our pits and quarries are really co-operating in the effort to provide properly cleaned empties. We therefore solicit your co-operation in seeing that your cars are returned to your railroad in a clean condition suitable for the next loading.

2. *An Important Message to Our Customers*—Railroad cars on cleaning tracks are costly to carriers, to the shippers and to you.

Please make it a point to completely unload your cars and refrain from loading debris therein.

The present high level of freight rates reflects the transportation costs of our railroads. Car cleaning, unnecessary per diem costs, extra switching to and from cleaning tracks and the loss of revenue from idle cars can be reduced with your help.

To the Editor:

The article "Carrier Liability" by Henry G. Elwell, which commences on page 40 of your September, 1949, issue of DISTRIBUTION AGE is very interesting.

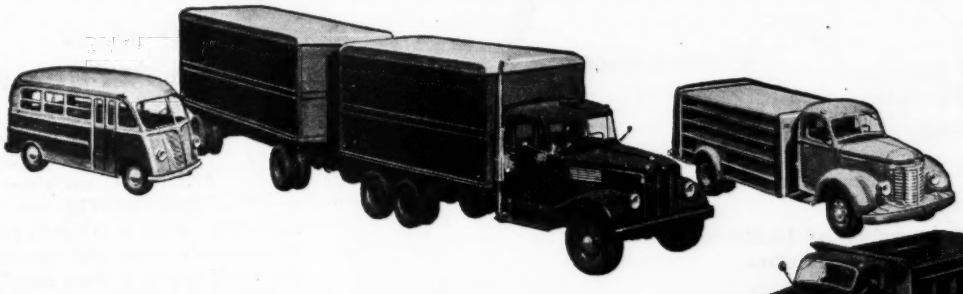
Incidentally, have you ever given any thought to issuing an annual or semi-annual index to cover your "Special Features" and "Editorial Comments" and perhaps "Letters to the Editor" and "Getting Down to Cases" columns?

Believe such an index in the form of a supplement to your December or January issue, or perhaps as a special feature, would be an attraction very helpful to the subscribers to DISTRIBUTION AGE. — F. J. Rebhan, traffic manager, American Crystal Sugar Co., Denver.

(*As a matter of fact, just the sort of listing we believe Mr. Rebhan has in mind—a listing of all major editorial matter — is provided for DA readers as a regular feature. Material is broken down into subject matter ("materials handling," "traffic management," etc.), and this index appears yearly as an insert. The last such supplement appeared in the Jan., 1949, issue and covered material from January through December, 1948.*)

Choose from America's

most complete line of trucks



for these 4 reasons

1 International Trucks are specialized for the job. International builds America's most complete line of trucks. It offers 22 basic models, 1,000 truck combinations ranging in gross vehicle weights from 4,400 to 90,000 pounds. It also offers 13 truck engines (gasoline, diesel, butane) as well as specialized units and parts, to satisfy individual hauling requirements. An International sales engineer who knows your business in terms of trucks helps you analyze your own hauling needs and select the right International Trucks to meet them.

2 For the 17th straight year International Trucks lead in heavy-duty sales. The country's most exacting truck buyers are the men who buy trucks of 16,001 pounds GVW and over. Their vote of confidence in Internationals is based on truck value—the same truck value found in every International ... light, medium, and heavy-duty.

3 More than half of all International Trucks ever built—in 42 years—are still at work. International has been building rugged trucks uncompromised by passenger car design or construction since 1907. International Trucks are built to last—and they do.

4 International Trucks are backed by America's largest exclusive truck service organization. 4,700 Dealers and 170 Company-owned Branches offer complete International Truck service wherever you drive a truck. Precision-engineered replacement parts, factory-rebuilt exchange units, and factory-trained mechanics are as close as your telephone. For the right truck to solve your hauling problems, see your nearest International Dealer or Branch.

International Harvester Builds McCormick Farm Equipment and Farmall Tractors ... Motor Trucks ... Industrial Power ... Refrigerators and Freezers

Tune in James Melton and "Harvest of Stars," NBC, Sunday afternoons

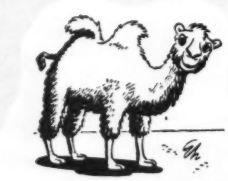
INTERNATIONAL INTERNATIONAL **TRUCKS**

INTERNATIONAL HARVESTER COMPANY • CHICAGO

HYSTER KARRY KRANE®

THE **REACH** OF A GIRAFFE

THE **STRENGTH** OF AN ELEPHANT



THE **ENDURANCE** OF A CAMEL

- ✓ **Lowest priced 10,000-lb. capacity mobile crane.**
- ✓ **Pneumatic tires—works anywhere indoors or outdoors.**
- ✓ **Adjustable boom—5 positions.**
- ✓ **Trunnion steering for maximum maneuverability.**
- ✓ **Speeds up to 10 m.p.h. in either direction.**
- ✓ **Great for loading and unloading gondolas, flat cars, motor vans.**

TRY IT... YOU'LL BUY IT...

Once a Karry Krane is in your plant or storage yard—EARNING for you—CUTTING COSTS for you—LIFTING AND MOVING all kinds of materials—you will wonder how the work was ever done BEFORE.

THOUSANDS OF KARRY KRANES ARE WORKING FOR HUNDREDS OF INDUSTRIES.

In some businesses it's a *production* mobile crane with regular materials handling jobs to do on schedule every day.

In other businesses, it's a utility, all-purpose, standby machine—able to go anywhere—ready to do any emergency or unusual moving job. Like good insurance—it's ready when you need it.

The Karry Krane is the LOWEST PRICED, 10,000-pound capacity mobile crane. It can do anything (within its capacity) that ANY OVERHEAD OR STATIONARY CRANE OR HOIST CAN DO and it can go anywhere to do it.

TRY IT and YOU'LL BUY IT. A demonstration in your plant—on your home grounds—will prove it to you. Your Hyster distributor is anxious to help you.

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Motaircargo

OPERATION AIRFREIGHT

"Clockwork" trucking, handling, air carriage and management (including systematization of procedures and paper-work) are all essentials for modern air freight operation.

By PAUL W. PATE

Cargo Traffic and Sales Mgr.
Delta Air Lines

THE manufacturer who speeds a 3,000-lb. machine across country and the sweet old lady who crates her Persian beauty for a short flight to a cat show represent the wide range of shippers who are taking advantage of a fast but low-cost method of transportation — scheduled air freight.

Every day such items as seafood (packed in special air-tight containers), animals, flowers, clothing, vegetables, medicine, and heavy machinery take to the air as part of this expansive air freight service.

Scheduled airlines issue a bill of lading which is commonly called an "airbill." This airbill consists of six copies and usually is made out by the shipper, who retains the original as his receipt after the truck agent signs it. After the shipment arrives at the airport, the airbill is completed by an agent who shows the charges and other pertinent information. One copy goes with the shipment directly to the consignee, and the others are used for receipts, accounting, and sales information. This simplified procedure reduces paper work to a minimum and prevents delays to shipments such as those frequently encountered in surface transportation where several documents are used instead of the airlines' "single document airbill."

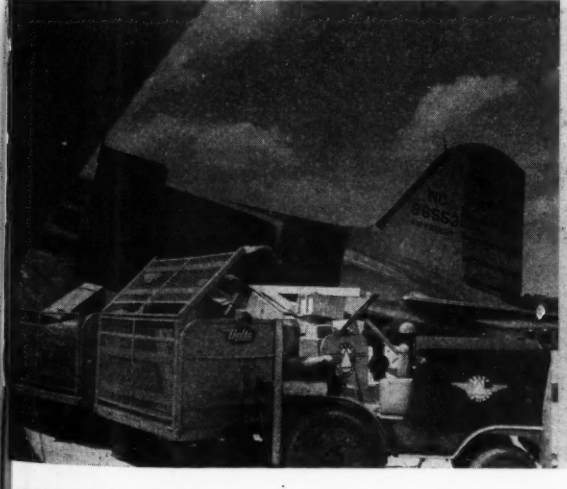
Scheduled airlines contract with cartage agents in the various cities on its routes to pick up shipments directly from shippers' premises and deliver them to consignees. This service is optional. When a telephone call is received from a shipper to pick up a shipment, the information is relayed to the cartage agent, who sends a truck to the shipper's address and carries the shipment to the airport. The air carrier's responsibility begins at the time the ship-

(*Continued on page* 28)

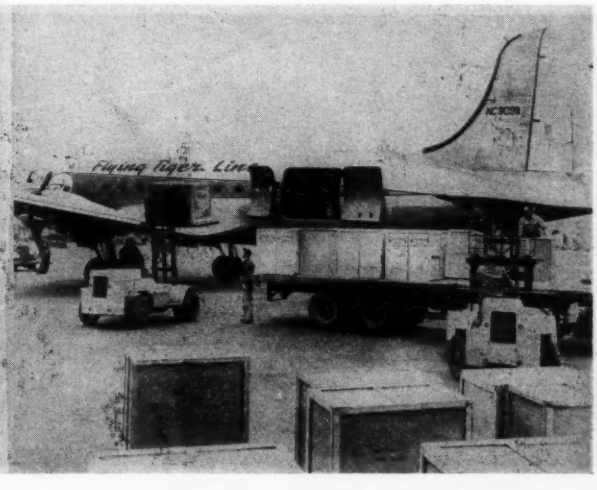
Acknowledgments

Distribution Age wishes to express its sincere thanks for the excellent cooperation given to it by companies, leaders of commercial aviation, scientists and members of the armed forces in the preparation of the group of articles on MOTAIRCARGO published in this issue. Among the organizations and individuals who offered their assistance are Dr. Hector Skifter, president of Airborne Instruments Laboratory, Inc., Mineola; the Port of New York Authority; Allied Maintenance, Inc., New York; leading air carriers; Dr. John H. Frederick and other consultants and contributors.

Unloading freight at Atlanta into trailer-train from cargo plane.



Fork truck takes cargo directly from trailer and loads it on plane.



AIRPORTS

Modern runways are almost two miles in length, and airports themselves are now large enough to cover the area of many good-sized cities.

WAR'S necessity hastened the design and mass production of larger aircraft, and the large number of such planes available for postwar cargo purposes is one of the major factors permitting continued growth in volume of air-freight business today.

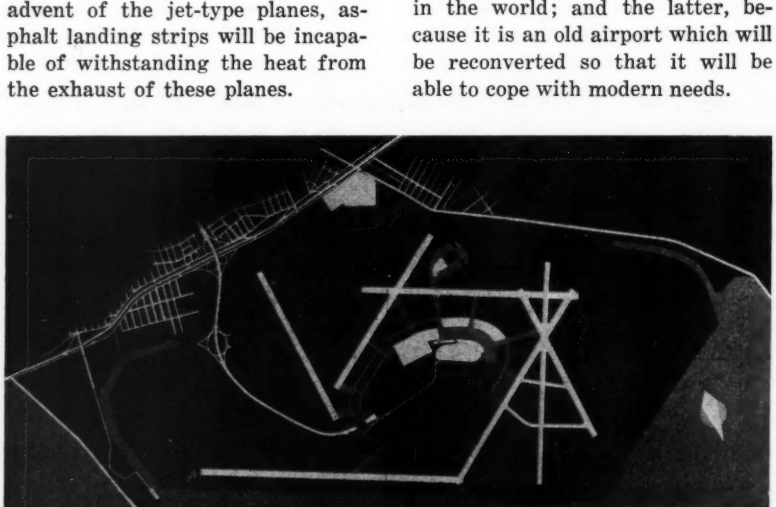
But these planes, and their more gargantuan offspring, have antiquated all but the newest of air terminals. Airports such as New York's La Guardia field (which can handle a capacity of 42 planes per hour and which was considered the last word in efficiency just a few years ago) are now outmoded.

Runways of 4,000 and 5,000 ft. are no longer adequate for the landing of the biggest airplanes. The composition of the runways, constructed for weights of 50,000 to 75,000 lbs., are not long able to withstand the abuse of constant landings and take-offs of planes whose gross weights equal from 125,000 to 150,000 lbs. With the advent of the jet-type planes, asphalt landing strips will be incapable of withstanding the heat from the exhaust of these planes.

The design of terminal areas is changing. Because of current need, more and more space is being made available for freight-loading positions, with corresponding changes taking place inside the terminal building to handle the influx of increased freight.

All these improvements must be made to meet the ever-increasing number of cargo flights. These increased frequencies result from changes in the handling of goods. There has been a speeding up of to-and-from airport deliveries. Airport improvement must follow if the shipper is to continue to perform the most efficient services expected of him.

New York's International Airport (Idlewild) and Newark Airport are illustrations of what is being done today to meet the airport-space needs of tomorrow; the former, because it is one of the newest and best equipped airports in the world; and the latter, because it is an old airport which will be reconverted so that it will be able to cope with modern needs.



Selecting a site for a major air terminal today is a problem which must be given considerable thought. The area itself must be huge (even up to eight square miles), and large enough to contain sufficient hangar space, runways, loading platforms, terminal buildings, maintenance buildings, fuel-storage tanks, auto-parking lots and other facilities. The sub-soil conditions must be suitable for or adaptable to airport usage. Surrounding terrain must be relatively free of obstructions such as tall buildings, smoke stacks, etc., so that glide areas are of sufficient dimensions, and safe. The site must also be accessible to metropolitan areas that the airport services. The airport must also be in an area of comparatively good weather conditions.

The design of modern airports bears no resemblance to the old short-grass air-fields with their hangar and operational shacks. Idlewild airport, comprising nearly eight square miles—4,900 acres—of land which was once sand and marsh wastes, is located less than 30 automobile-travel minutes from downtown New York.

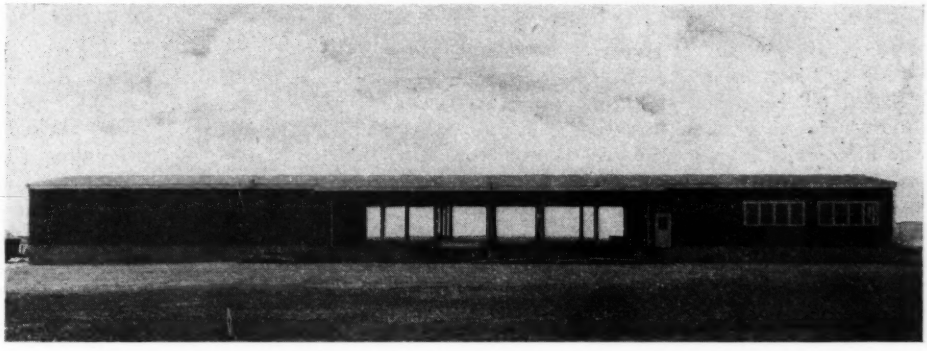
The oval central terminal area of 160 acres is located in the center of the field and will (when developed) contain two terminal buildings, one at each end of the oval. Automobile approaches to the central terminal area are by underpasses, thereby eliminating possible interference with airplane traffic.

At present there are seven dual runways varying in length from 8,000 to 9,500 ft. There are 42 plane-loading positions. When the airport is complete, there will be

(*Continued on page* 36)

TERMINALS

New American Airlines freight terminal at Newark.



American Airlines' new freight terminal at Newark Airport in final stages of construction. Plane-loading area is in foreground; truck-dock section across terminal. Sliding overhead doors to be installed.

EVER since December of 1947, American Airlines and, more particularly, American Airlines' supervisor of aircargo at its Newark station, Maurice Downing, have been looking forward to the day when they could gather under one roof the widely scattered flight, maintenance and supervisory operations of their aircargo enterprise at Newark Airport. Early this month Mr. Downing and his bosses are scheduled to see their two-year hope come to fruition. American has its roof.

Mr. Downing, however, prefers to describe the company's new 40,000-sq.-ft. freight terminal, through which will move the majority of American Airlines' freight originating in, and destined for, New York City and vicinity as "basically a platform." American's "platform" will enable the line to integrate an operation which heretofore has rambled over several thousand square yards of airport.

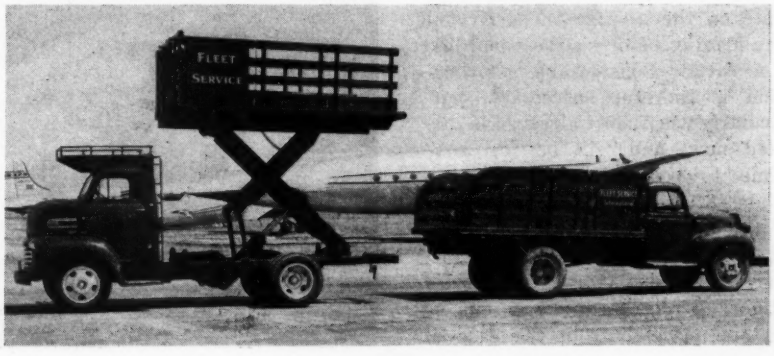
A low rectangular single-story shed with concrete floor and wood superstructure, the terminal will function as the key link in a chain of operations embracing freight-handling, plane maintenance, flight supervision, billing, and the myriad of other functions involved in the provision of scheduled overnight freight service to points the country over.

Plane-loading, to take one aspect of aircargo operations, will no longer entail transporting merchandise a country mile from terminal to loading area. For the new terminal, which, for purposes of freight-handling, has six truck-dock sections, each with a sliding overhead door, is smack in the middle of American's plane area. Loading will be basically a straight-line operation from truck to plane.

For l.t.l. freight the line will run something like this: Freight will be discharged at one side of the terminal, placed immediately on a scale, and then moved by gravity conveyor across the terminal, where it will be grouped with other l.t.l. freight according to destination. From here, continuing its straight line of march, it will be taken to the plane by one of three methods, depending on its adapta-

(*Continued on page* 43)

Highway carrier—materials handling—air carrier—MOTAIRCARGO! Integration of truck with elevating body and other equipment at Newark Airport, fronting new terminal.



MATERIALS HANDLING EQUIPMENT

Special survey shows widespread use of materials handling equipment at larger airports, but underlines need for further progress

AIRCARGO handling at airports is still a more-or-less makeshift matter. For one thing, we do not yet have a real aircargo plane in commercial use. For another, the planes now in use are far from standardized, and their utilization makes handling difficult, owing to a lack of multiple loading doors, limitations on full-end loading, non-rectangular cargo compartments, the shape and non-compartmentalization of the fuselage, and the lack of synchronization between the plane-bed level and that of the truck bed. Added to all this are the doubts in the minds of airport operators and air carriers as to just what future aircargo business will amount to in terms of nature and volume of freight.

Another aspect of the problem is the fact that aircargo, used in its broadest sense, arrives at the airport by a variety of means. Air freight is brought in by truckers operating under contract with Air Cargo, Inc. (the coordinating ground-handling organization of the scheduled airlines) as well as in the trucks of individual shippers. Air express arrives in Railway Express Agency trucks; mail, in U. S. Post Office trucks; and passenger baggage, still regarded as aircargo by most airlines, by various means, with which we are all familiar. Company material shipments originate on the airport but arrive at the loading point on the usual airline carts. Considerable coordination is therefore necessary, particularly when most aircargo is carried now—and will be for some time to come—in combination planes with passengers.

One handling problem involves picking up the various types of aircargo destined for a particular flight. Freight can be assembled in one place, but, in the case of transfer from one airline to another, a pick-up problem on the airport is created. Express may be placed with freight at the airport, but thus far the REA has not favored this system, as it feels, at least in theory, that express is entitled to flight priority and should be handled separately to avoid resortings. Air mail, which now includes fairly heavy parcel-post shipments, must be separated from freight and express because of the security involved and because of the regulations of the Post Office Department. Baggage, which, with the continued use of combination planes, is still a big cargo problem, is assembled in still another area. To get all this cargo together without delay for a given flight is still an unsolved problem at many airports and involves the use of many different kinds of handling equipment.

A partial list of this equipment with definitions where deemed necessary, follows (Definitions have been extracted from *Material Handling Equipment: A Modern Manual*, by Matthew W. Potts.):

Fork truck.

Portable belt conveyor: A self-contained belt conveyor, mounted on wheels or casters, for moving from one location to another.

Industrial tractor: A self-propelled trackless vehicle for drawing or pushing load-carrying units.

Hand platform truck: A truck designed for hand propulsion with a platform or deck on which the load is placed manually, and built with various arrangements of wheels and casters.

Truck with elevating body: A truck whose body can be raised to various desired heights to permit easy loading or unloading of plane.

From truck to conveyor to plane. United makes produce shipment from California to New York.

Delta takes advantage of a variety of materials handling equipment to load assorted packages.

This publication has just completed a survey of airline utilization of materials handling equipment.

In the first place, it appears that leading transport companies rely largely upon certain types of equipment, such as fork trucks and conveyors. Totaling up units of equipment for each type, it is found that the major airlines use 109 fork trucks, 56 portable conveyors, 91 sections of gravity conveyors, 100 industrial tractors, 84 nose loading stands, 123 live pallets and 29 industrial trailers. This should *not* be taken to mean that each airline (and there are seven lines) used about one-seventh the number in each category. All it means is that there seems to be general agreement that conveyors, fork trucks, industrial tractors and hand platform trucks, among other types, are useful for cargo-loading and unloading, as well as for general baggage work. Incidentally, it will be noted that Slick is not comparable with, for example, TWA, which carries both cargo and passengers. Slick goes in for gravity conveyors, which the other lines do not use; the latter, however, have portable belt conveyors.

The above totals are important for materials handling producers in that they indicate the present trend (if such it may be called) in the purchasing of materials handling equipment. Buyers rely largely on standard equipment, rather than going in for special equipment. One line goes in for the "vanette"; another, for a "transload trailer," etc.

Secondly, there is considerable variation between airlines on utilization of supplementary equipment. This is no doubt due in part to incomplete information from a few companies, but unquestionably it also reflects the important role played by the respective companies' airport managers, who in some cases favor pallets for loading purposes and in other cases ignore them. Thus, in contrast with such items as fork trucks or portable conveyors, there is spotty use of chutes, pallets and nose loading stands.

A glance at the data for New York shows that one line uses 44 hand platform trucks, another uses nine and another three, while three report no use of hand platform trucks at all. In Newark, United has 18 such trucks, while Capital has one. In other words, even though one or another line may have failed to report on this category, the evidence of lack of uniformity on some equipment is clear and unquestionably valid.

Lastly, here is evidence that the airlines have made good use of available types of equipment; that is, the variety of types suggests that considerable investigation has been made of equipment on the market. As to the future, the data should not be interpreted to mean that the same proportions among the types of equipment will continue to prevail. All-cargo transportation will continue to expand, and this factor, together with new and perhaps radical plane designs likely to appear, will probably make for eventual changes in the number of types of materials handling equipment in use.

Accessory equipment — trucks, for example — is utilized in air-cargo operations with greater or lesser frequency, depending on the nature of the merchandise to be handled. A relatively low-powered truck may be driven to each pick-up spot, where cargo is loaded according to station order. In this type of operation the truck drives to the loading area and backs as close to the cargo door of the plane as possible. This is the simplest method and is sufficient at airports handling but a small amount of

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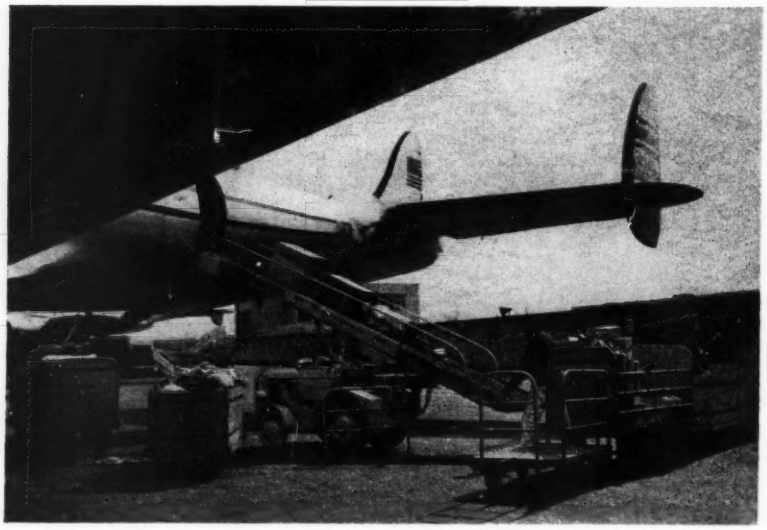


Photo: Pan American World Airways
Unloading mixed cargo by conveyor.

PACKING

WHEN shippers talk about the economies that arise from using aircargo services or air express they will more often than not mention savings in packing costs. In fact, packing economies are often an important offset to the higher rates of air transportation. Not long ago the Department of Commerce interviewed users of aircargo services and ran across some interesting instances.

For example, there was the wholesale florist in Philadelphia who said: "We simply put the flowers in boxes with a little ice and they arrive in much better condition. Economy in packing results from this type of shipment, compared with rail express, for which the flowers have to be ice-packed in boxes and braced against slipping." By use of air freight a florist saves from seven to 10 lbs. of ice in the packing of a 45 to 50-lb. box.

Again, a firm shipping electric motors for phonographs from Ohio to New England said of aircargo: "Shipping costs no more than Railway Express because no crating has to be done." The traffic manager of a western aircraft manufacturer stated: "Some saving is experienced in the lighter crating and packaging of spare parts, and even on the motors and propellers. On the motors we estimate that the saving in crating-weight is about 65 lbs. each. Further savings could be had, were it not for the fact that ground transportation is still required to get the goods to and from the airport."

The last part of the traffic manager's comment emphasizes a fact which is sometimes overlooked by advocates of air transportation—that nearly every air shipment has a ground-transportation problem at either end of the journey. Many air express shipments end up on the railroad because they are destined to off-airline points, and all air express and aircargo shipments (with some very few exceptions in the perishables field) are moved to and from airports by truck. This means that containers have to be stronger and heavier than they would have to be if the entire journey were by air.

Railway Express Agency applies only the general rule to air express that "all property shall be so prepared or packed as to insure safe transportation with ordinary care and handling." The airlines specify the following packing and marking requirements in their Official Airfreight Rules Tariff:

(a) Shipments must be so prepared or packed as to insure safe transportation with ordinary care in handling.

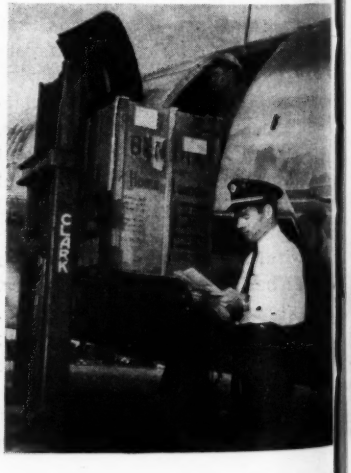
(b) Any article susceptible to damage by ordinary handling must be adequately protected by proper packing and must be marked or bear appropriate labels.

(c) Any article susceptible of damage as a result of any condition which may be encountered in air transportation, such as high or low temperatures, high or low atmospheric pressures, or sudden changes in either, must be adequately protected by proper packing and any other necessary measures.

(d) Each piece must be legibly and durably marked with the name and address of the consignor and consignee.

(e) Pieces with a floor-bearing

Loading an appliance by means of fork truck.
Photo: Delta Air Lines



FOR MOTAIRCARGO

Another basic essential for motaircargo operations is proper packing and packaging.

weight in excess of 100 lbs. per sq. ft. must be provided with a skid or base, suitable for use in available aircraft, which will reduce the floor-bearing weight to 100 lbs. or less per sq. ft. Such skids or base must be furnished by the consignor and included in the gross weight of the piece.

(f) Magnetic material will be accepted only when marked "MAGNETIC MATERIAL."

It will be noted that several of the above packing requirements result from the peculiar characteristics of the plane as a cargo carrier. Shippers have to consider low temperature and reduced pressure in relation to high altitudes. Cut flowers, fresh vegetables and certain liquids might, at high altitudes, be in danger of freezing unless they were properly protected. Low pressures, on the other hand, may start leaks in some containers which makes friction-top cans containing chemicals or liquids vulnerable to high altitudes. The floor of a plane is not exceptionally strong, so that density of packages becomes an important factor. Certainly, it accounts for the rule to reduce floor-bearing weight to 100 lbs. or less per sq. ft. This stipulation is not as restrictive as it might seem, because a relatively small box with a base of 27 x 16 in. occupies a floor space of 432 sq. in., or three square feet. This box could, therefore, have a load of 300 lbs. without exceeding the 100 lb. limit.

Because the airlines still carry a considerable proportion of aircargo in combination aircraft with small doors or other openings for loading and unloading, they still provide that "pieces of unusual shape, or weighing in excess of 200 lbs. or more than 20 x 24 x 44 in., or whose combined length and girth exceed 132 in., will be accepted only by advance arrangement." It is also provided that shipments requiring special devices for safe handling will be accepted only when such special devices are provided and operated at the risk of consignor or consignee; and that shipments requiring special attention, protection or care enroute will be accepted only upon advance arrangement. The rule regarding the marking of magnetic material arises from the fact that such shipments are stowed as far as possible from the navigational instruments so that they will not affect them.

Every now and then someone attempts to generalize on the packing costs for air shipments as com-

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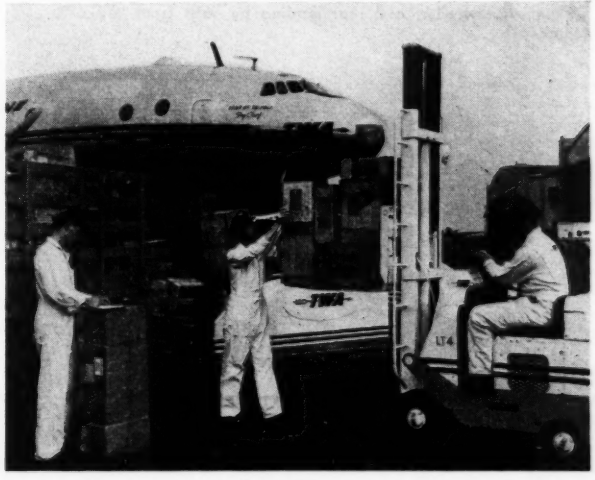
Interior view of Cargoliner 230, showing cargo pits.
Photo: United Air Lines

Loading a highway truck at La Guardia Field.
Photo: TWA



FLIGHT EQUIPMENT

The integration of truck operations, handling at airport and loadi of planes at highly economic levels is fast approaching.

NOT a single plane designed for cargo transportation is as yet in commercial service. The so-called all-cargo planes are passenger models used for cargo, but not designed for that purpose. The continued use of passenger planes for cargo operations, imposes a distinct handicap on the development of both cargo operations and planes themselves.

Users of passenger planes for cargo (freight) purposes have little choice today, both by reason of scarcity of new types and the frequent partial dependence on passenger revenue. Were more modern planes available, a considerable shift to freight would undoubtedly take place. The common plaint today from all sides is lack of ultra-modern flight equipment.

However, a number of cargo planes which will haul anything are taking form on aircraft manufacturers' drawing boards or even in the shape of "mock-ups" at their plants. Typical of these is the Douglas C-124A, capable of carrying a payload of 50,000 lbs. The complications of loading and unloading a plane of this capacity are solved as shown in the accompanying illustration. Main loading doors of clamshell type will open in the nose directly below the pilot's compartment through which a full-sized truck or trailer may be backed. There will also be an electrically operated elevator and well amidships. The nose-loading doors can be unlatched, and opened, and the ramps lowered, in approximately 25 seconds. The ramp capacity is 50,000 lbs. When these planes are in use it is expected that the cargo-loading well doors can be unlatched, opened, and the platform or elevator lowered in an elapsed time of approximately 75 seconds. The loading-platform will be able to lift or descend 10 ft. in 25 seconds with loads up to 8000 lbs. With loads of 8000 to 16,000 lbs., its rate is expected to be five feet in 25 seconds.

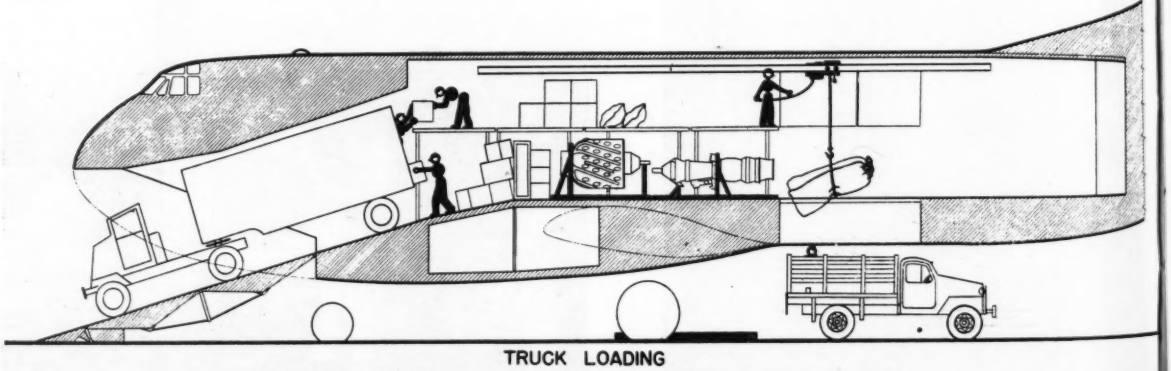
Planes such as the C-124A can be loaded in other ways than that shown in the illustration. Fork trucks may be used in several ways. They may be driven under the plane to lift cargo or pallets with cargo to the main floor. When the ramps are in outboard position there is ample space to operate a fork truck between them, or tow of carts may be taken directly into the plane. The ramps will be removable so that two fork-lifts may be operated side by side at the nose opening.

Facilities such as those to be provided by the C-124A and similar designs show the fallacy of one of the early theories of cargo-handling which was that a large cargo plane should have a floor at truck-bed height for ideal loading. Now carriers will be able to drive a truck inside the plane and unload cargo directly to its final location, thus making the height of a heavy cargo-plane floor of no particular importance. It has been estimated that the solution of this problem alone will save $2.50 per ton in cargo-handling costs, to say nothing of substantially decreasing the time of loading and unloading.

Summing up, there is great need for new designs—not on the drawing boards alone but at commercial airports. The big factor in air freight may be getting the freight, but if costs were cut at landing

(*Continued on page* 45)

Douglas C-124A, showing method of direct front loading off truck-trailer, and rear loading by hoist from truck.



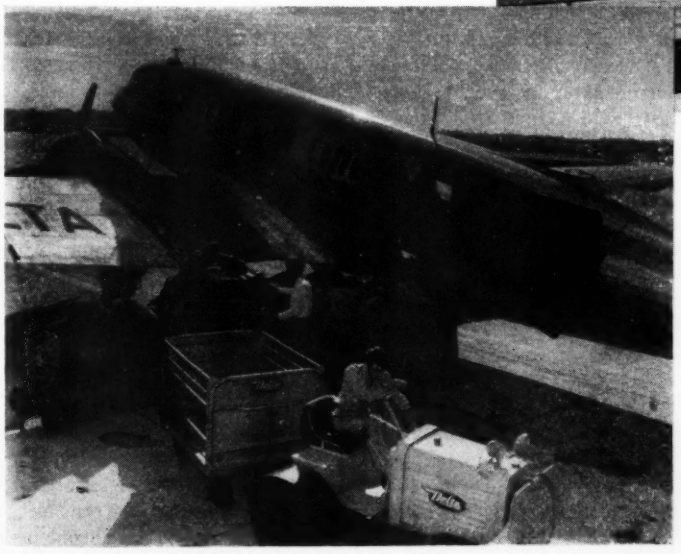
TRUCK LOADING

I. AUXILIARY FLOOR MAY BE LOADED FROM TRUCK OR TRAILER BACKED INTO AIRPLANE

Above—American Airlines' DC-4, shown taking on fuel at Newark Airport. Cargo capacity is 19,000 lbs., due in part to novel freight-placement system and modification of plane interior.

Left—Loading United Air Lines' DC-4 Cargoliner from platform trucks by use of I-beam. Cargo capacity of this plane is 16,000 lbs.

Above—Loading the "Shanghai Merchant" at L Guardia Field, N. Y. This trans-Atlantic plan which operates as far as Israel, is TWA's first i ternational all-cargo plane and can carry a pa load of 12,000 lbs.



Left—Cargo plane being loaded at Atlanta a field. Smaller planes are valuable on many d mestic routes.

TRAFFIC CONTROL

By IRWIN C. NYE
American Airlines

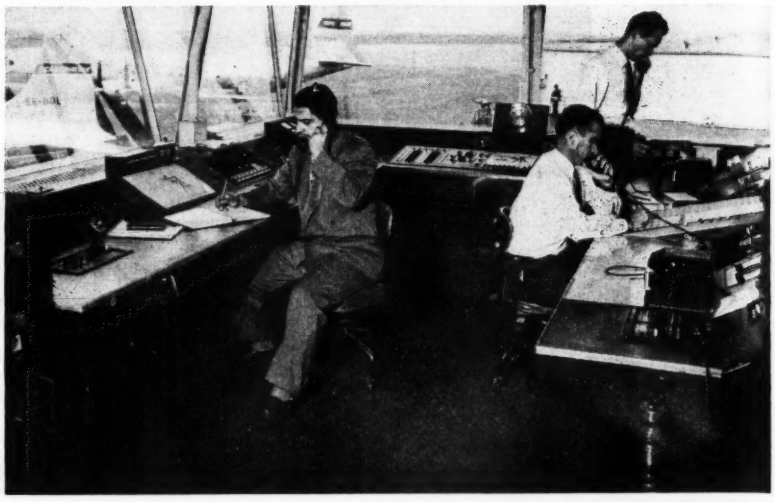


Photo: Port of N. Y. Authority
Modern control tower recently erected at New York International Airport.

WHAT is the biggest advantage of air transportation for those who use it to distribute their products? Your answer, of course, is speed. Oh, yes, there are other advantages, too. It can, in many cases, eliminate the problems of shipping in carload lots, of spoilage of perishable goods, etc. It can provide ready access to broader markets. But, principally, it offers savings such as these because it is fast and direct.

Thus, when weather causes air transport facilities to suspend service or to delay flights, the principal advantage the air freight carriers offer to the distributor disappears.

During the war years, we heard on every side predictions of how the post-war era would see the blossoming of air transport of every kind — of how the sky would "fill with commerce" — both passenger and freight. This blossoming of air transport is still in the future. We still look forward to lower rates, planes tailored to air freight requirements and, above all, all-weather reliability of air transport service. When these things are achieved air transport will come of age.

What, then, are the predictions of the experts on air transport? When can the seafood shipper in New England, the clothing manufacturer in New York and the cheese maker in New Glarus, Wisconsin, shift from surface to air transport completely, without encountering traffic delays due to weather and other slowdowns in air movement of their goods? In trying to determine these answers, it is only necessary to read reports prepared in endless number by the experts to become confused completely. There are almost as many reports as experts.

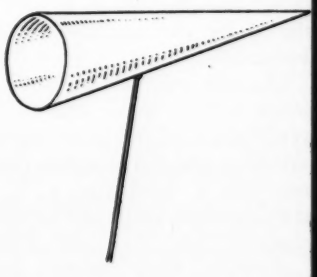
Some progress is being shown this year, thanks to agreement—at last — among the numerous interested parties as to the path to be followed to eventual solution of aviation's most difficult problem, the development of all-weather airways which will permit free movement of as much air traffic as may develop.

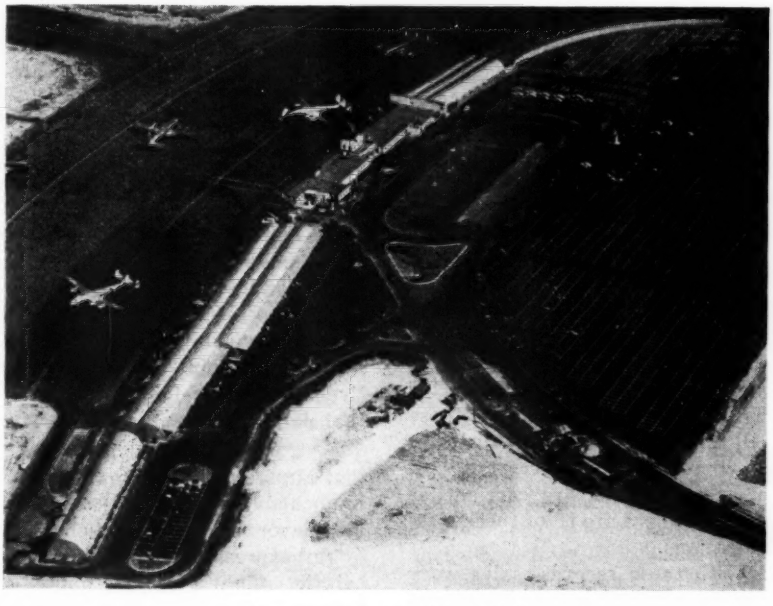
This agreement among the many groups involved in the airways problem was reached after more than three years of postwar chaos. Two years ago, a special committee of the RTCA (Radio Technical Commission for Aeronautics), comprised of experts representing the military services, the Civil Aeronautics Administration, the airlines, the equipment manufacturers, and a few others, began the work of drafting a report which, today, is considered a "bible" for those now charged with directing development of America's future airways system. Their report, "Air Traffic Control," dug deep among the many known techniques of electronics to standardize upon those methods for aiding all-weather flight which the special committee believed were most apt to develop at an early date into usable equipments for aiding aircraft to move safely from one place to another regardless of weather conditions.

This "bible" was completed at a most opportune time. The President's Air Policy Commission, headed by Thomas K. Finletter, published its report, "Survival in the Air Age," in January, 1948. It served to bring public interest in aviation to a peak just in time for the February publication of the special committee's work. When the Congressional Joint Aviation Policy Board reported its conclusions in March, most of the suggestions contained in the "bible" were adopted, thereby assuring their continued support and financing by the Federal government.

Promptly thereafter an organization was agreed upon; a method was established to sort problems of

Still another essential is modern traffic control, with increased use of radar and other equipment. Traffic control systems are replacing the old piece-meal approach.





Planes awaiting takeoff at airfield.

interest only to military aviation from those "general" airways problems; and it was decided to proceed on both immediately. Work has now been underway for approximately a year. A true beginning has been made on attacking many difficult engineering problems which remain to be overcome. The Air Navigation Development Board, a one-year-old joint agency of the Departments of Commerce and Defense, is charged with overseeing the research and with guiding the development of a new and adequate airways system. Its activities today are two-fold.

First, it must, working with the Civil Aeronautics Board and other governmental and semi-governmental aviation agencies, bring into being prior to 1954 an airways system based on equipments that can be developed, built and installed in the short time alloted to meet immediate demands for improved airways. Simultaneously, it must initiate and guide a program—target date, 1954—which will bring the airways abreast of the requirements at a future date and make it possible for engineers thereafter to keep ahead of developing needs with a moderate amount of work.

Any discussion of the activities underway engineering-wise tends to become technical in nature, but to indicate the nature of the work involved, the requirements can be outlined briefly.

To fly in all kinds of weather, two main airway "ingredients" are required. First, aircraft pilots must be able to navigate planes from any point in the nation to any desired destination without danger of becoming lost. It is agreed that the four-course radio range airways — in use since about 1937 — are no longer adequate. A new navigating system is needed.

Second, some method for safeguarding planes from each other is needed. Today this safety is provided by a system which separate planes in space, both in altitude an along the airways. The work i done (rather inefficiently) in men' heads and on small strips of card board which are kept in order o sliding panels in Airways Traffi Control centers across the nation As a result, it is often necessary t refuse some aircraft permission t fly until others have landed or a least accurately reported their po sitions by radio. When bad weathe causes planes to await permissio to fly from any major city alon the airways, similar delays resul all along the air routes spoking ou from that city for hundreds o miles. And when a whole regio has this semi-flyable weather, sa the Eastern Seaboard, flight sched ules are disrupted across the entir nation. This is the problem of ai traffic control.

The engineers believe they hav the answer to the first of these tw problems—a better navigating sys tem. In fact, the first of the ele mentary devices for the improve system are today being installed Three devices are concerned. High frequency radio "omnirange" sta tions are being established acros the country to replace the old four course airway ranges. These spe cial "radio broadcasting stations will make it possible for pilots t know at all times their exact direc tion from the station to which the are tuned. Some doubt has arise

(*Continued on page* 30)

MOTAIRCARGO—OPERATION AIRFREIGHT

(*Continued from page* 17)

ment is picked up by the cartage agent at point of origin and ends when the shipment is delivered safely into the hands of the consignee by the cartage agent at destination.

Aircraft used by air lines depends largely on several factors: availability of suitable aircraft, nature of the commodities carried and the characteristics of the areas covered, including volume of cargo.

Douglas C-47 cargo planes which operate on schedule between large traffic-producing cities are one of the types used. Capacity of these planes is approximately 5,500 lbs., and large double entrance doors are featured for big pieces of machinery and other bulky freight. Airfreight is also carried in the cargo bins of passenger-freight planes; the DC-6s carry approximately 3,000 lbs. of airfreight. The cargo bins of the DC-4 passenger planes accommodate approximately 6,000 lbs. of freight. The cargo bins of the DC-3 planes accommodate approximately 1,500 lbs. of freight.

Delta inaugurated its air freight service in August, 1946 (when sufficient aircraft were made available by the government for commercial use), between all points on its system and points served by other scheduled airlines, both in the United States and foreign countries. It is also provided between all points on the system and all points in the United States served by motor freight, rail express, or rail freight.

What appears on the surface to be a matter of interest to airlines but which has produced great benefits for shippers and their traffic managers is the use by the above company of an IBM system.

Cards are punched on every shipment. That IBM record tells the pounds of freight that originate at each station and their destinations. Special commodity code numbers have been devised for punching on these cards; these tell the exact number of shipments and pounds of different types of of freight which are carried per month. There are 65 of these classifications.

With these records, sales work can be planned on an intelligent basis. If, for example, 20 percent of total volume consists of clothing, salesmen will be directed to spend a substantial part of their time contacting traffic managers as well as receivers. With these records, Dallas will know what Chicago is shipping and will solicit similar movements to other points, knowing full well that a certain commodity moving from Chicago by airfreight will more than likely be susceptible to airfreight solicitation by Dallas. This system also permits control over the volume of traffic received from and given to connecting airlines.

Cargo sales representatives must learn as much as possible about a firm's business before calling on its traffic manager, for a knowledge of its products and costs will enable the airline representative to point out more effectively how airfreight will benefit that particular company.

A strong sales point is the fact that air freight rates (as charged by scheduled carriers) compare very favorably with those charged by rail express. For example (typical air freight rates are quoted), the air freight rate from Atlanta to Birmingham is $2.13 per cwt., as against $3.14 by rail express; to Cincinnati it is $4.55 as against $4.90; etc. A charge is also made for pickup and delivery; however, even with this additional expense air freight is generally cheaper. Even where air freight costs more, as on some long hauls, the speed differential is enormous. This great advantage in delivery time is of growing importance and, in the case of a great number of commodities, is of critical importance in this period of thinner stocks on hand.

To sum up the advantages of scheduled air freight (and in large measure of all air transportation), shipments by air are fast, and have the added attribute, thanks to close coordination of trucking, office systems and modern planes, of regularity and security.

The operation of a typical non-scheduled airline follows:

(*Continued on page* 54)

Conveyor equipment is used in assembling freight. Cargo is placed on pallets and grouped according to destination.

FUTURE MOTAIRCARGO

The big job faced by the carriers is to develop more traffic.

By JOHN H. FREDERICK *Motaircargo Consultant*

PRIOR to 1945, the total volume of air express—the aircargo of that time—was less than the volume of airmail. However, as soon as hostilities ceased, the certificated and non-certificated airlines began to develop aircargo as we know it today. Its volume increased sixfold over the following three years, and there is every reason to expect that it will continue to grow over the next several years. The rate of growth may not be as rapid as it has been, however, due to several basic characteristics of air transportation, the significance of which is just being realized by those responsible for aircargo development.

1. *The plane is a poor weight-carrier.* This is, of course, perfectly obvious, but it has more significance in aircargo traffic than in passenger traffic. The average weight a plane can carry per cubic foot of space is referred to as "plane density." The significance of density to air transportation lies in the fact that the effective density of a plane is considerably less than that of other carriers. This is shown in the table, which compares the effective density of cargo planes with that of rail cars. Only a small percentage of commodities moving in this country have a density within the range of the effective density of present planes. Moreover, every part of a plane cannot carry the same weight-load, and its payload is not constant, but decreases with distance.

Recently, the Civil Aeronautics Administration, in studying airport needs for handling the aircargo of the future, has pointed up a number of reasons why aircargo growth may be slowed down and why aircargo services may not be as easy to sell as they have been in the recent past. These are:

2. *Aircargo has so far been long-haul traffic.* Up to now, the average aircargo haul has been almost three times that of rail freight and five times that of motor freight. More than two-thirds of the aircargo tonnage of the past few years has been hauled a minimum of 500 miles. By way of contrast, 85 percent of motor-carrier traffic moves less than this distance.

3. *Length of haul.* Since the savings in time by air transportation are due solely to the speed of the plane itself, the greater the proportion of ground-time, the smaller the benefits of this mode of cargo transportation. In fact, so decisive is this factor that many shippers and receivers have regarded freight hauled less than 350 or 400 miles as not suited to air traffic.

Since only a small part of the freight traffic of this country moves relatively long distances, the long-haul attribute of the present-day aircargo carriers limits air traffic to a fraction of all freight. The extent of this limiting factor will, of course, be modified by the possible development of new markets through the use of air transportation, thus increasing the relative importance of long-haul traffic in the total flow.

It may also be modified by technical developments in aviation which could make short-haul transportation of cargo economically feasible. So far, it will have to be admitted that progress in either direction has been slight.

4. *Most aircargo is light in weight.* Aircargo began as air express, which was and still is small-package traffic. With the advent of all-cargo operations the average weight of shipments rose considerably, but it is still small in comparison with the weight of shipments carried by other carriers. Slick Airways, one of the leading all-cargo operators, recently reported average shipments of only 292 lbs. while American and United, the two most important airline cargo carriers, reported averages of but 148 and 170 lbs. respectively.

Small shipments comprise but a fraction of the freight traffic of this country, so this characteristic of aircargo creates a second limiting factor. Forecasts on future developments, however, vary. On the one hand, it is argued that the average shipment will tend to shrink in weight as more commodity groups become important in air cargo. On the other hand, the increasing utilization of all-cargo planes and of direct aircargo routing might well increase the average size of shipments.

5. *Aircargo rates continue relatively high.* Despite a spectacular decline during the last three years from over 60¢ a ton-mile to a

(*Continued on page* 62)

Effective Density of Cargo Planes Compared With Rail Cars

Carrier	Number of Cubic Feet	Weight Carrying Ability in Pounds for 675 Miles	Effective Density (Lbs./Cu.Ft.)
DC-3 (Willis)	1,223	7,500	6.3
DC-4 (United)	3,310	17,129	5.2
C-46 (Slick)	2,554	11,220	4.3
Express rail car	5,320	100,000	18.7
Refrigeration car	2,260	60,000	26.5
Rail boxcar	3,713	100,000	26.9

Source: Civil Aeronautics Administration, *Domestic Air Cargo.*

TRAFFIC CONTROL

(*Continued from page* 27)

as to whether existing omnirange equipment is as accurate as may be desired, but the problem is less serious than certain others.

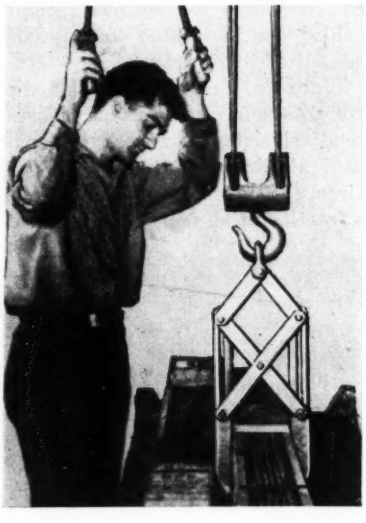
Working with the omniranges will be a second kind of "radio station" known as Distance Measuring Equipment (DME). By reference to this station and the omnirange, the pilot will know not only his direction from the station but also his exact distance from it. He will be fixed in space at any instant by reference to his omnirange-DME receiver.

If the aircraft pilot had nothing to do in flight but work geometry problems, these two equipments would be adequate to permit navigating from any U. S. airport to any other. But since pilots' hands are full of other things, they need a special computer to solve geometry problems automatically. It must be able to accept electronic impulses from the omnirange-DME receiver and from the dials the pilot will set to say what course is to be computed and flown. It must give out answers which can be recorded upon meters or instruments to show the pilot whether to turn or to continue straight on to reach his destination. These "answers" must also be such that they can be made to operate the automatic pilot without attention from the pilot when it is desirable that they do so.

Engineers say such a computer can be built at an early date. Trial ones exist today. It can be small, accurate and not terribly expensive or hard to maintain. It will be capable of working continuously while in flight and of being switched instantaneously from station to station as an aircraft proceeds across the country. In view of the much more complex computing devices being built today, the engineers obviously can build it.

The problem of controlling traffic adequately is today the large hurdle to immediate airway improvement. So many variable elements act upon the safe passage of aircraft that when many planes are involved in a traffic pattern, the possible complications are almost numberless. The altitude and direction of each plane, its desires as to climbing or descending, its speed, maneuverability and rate of fuel consumption all act to determine the requirements for the traffic control system. Taken as a whole, such problems appear almost insuperable. The experts have chosen what seems a wise approach; they are chipping at the mountain of difficulties by making small, one-at-a-time improvements in handling aircraft movements.

Automatic communications equipment to provide air traffic control centers better information on the exact minute-by-minute whereabouts of each plane will come into being before long. Mechanical and electronic aids will replace crayon and cards for keeping tabs on each flight in progress. Computers will tick off the seconds to indicate safe separations between aircraft, and flashing lights will indicate to airway controllers the points in the traffic pattern which are in immediate need of their closest attention.



The Beacon Claw line of grabs, manufactured by Cleveland Beacon Products Co., Cleveland, has a weight-capacity range of 400 to 1,000 lbs., yet units are said to be extremely light in weight. The grab exerts its own pressure, the pressure increasing as the weight of the load increases. Units are available in three standard sizes: 4 in. - 10 in.; 10 in. - 20 in.; and 20 in. - 36 in. The heat-treated spurs in the jaws are replacable. No manual adjustment is required to handle different sizes. Toggle design is stated to permit minimum head-room clearance.

Obviously, all of these devices cannot be developed, built and installed across the nation overnight. There remains much work to be done by the rather limited number of scientists and engineers trained to devote their energies to the air traffic control field. But, with good sense and good organization applied to the problems, an interim airway system better than that of today will result prior to the 1954 deadline.

It is rather more difficult today to speculate on the airways of 1965. Much of what must be discovered before they can be built is still to be determined. Much additional "basic research" in the fields of weather, radar, communications and even flight characteristics of the aircraft to be used in that advanced era must be known before definite progress toward the airways of tomorrow can be shown. The planning of the basic research is underway. Results should follow before many more years pass.

In closing, it seems advisable to indicate that, in spite of the confusion so recently resolved, some progress toward better air transport reliability has been made in the years since V-J Day. If this were not so, the Berlin Airlift would not have been possible. Both military and civilian pilots have learned the value of such precision radar devices as GCA (Ground Controlled Approach). Surveillance radar, which can "see" every aircraft flying within a radius of about 100 miles is finding application in areas of greatest air congestion. Airport and airway controllers, as well as those who fly aircraft for business or pleasure, are learning to cooperate to enable the completion of scheduled air transport operations whenever possible. Air lines have learned to make their schedules realistic enough so that they are possible of accomplishment in most cases in spite of the elements. And all research and progress is not confined to laboratories.

(*Continued on page* 110)

It's a bloomin' miracle—from California!

ANOTHER AMERICAN AIRFREIGHT SHORT STORY

This year many a flower that first blooms in the sunny soil of California goes courting next day in far off Eastern markets, thanks to Airfreight. For California flower growers soon found that their budding venture into Airfreight distribution blossomed forth into a rich bouquet of profits. In eight short years Airfreight has helped expand California flower shipments to the East from $2,000,000 to $20,000,000 annually.

Here is another striking example of how Airfreight serves American business by making possible certain advantages that any business man can understand. California flower growers are not only enjoying *distribution* that would be difficult to attain by other means of delivery, but also faster *turnover* and elimination of *spoilage*.

As a supplier or a customer have you ever stopped to consider how you, too, might profit from using this modern means of distribution, as *versatile* as it is *valuable*. Remember as the distance increases, so do the benefits of Airfreight to both the shipper and the consignee. For free literature, write today to American Airlines, Inc., Cargo Division, 100 East 42nd Street, New York 17, N. Y.

AMERICAN AIRLINES Airfreight

IT'S HAPPENED AGAIN

The Operations Committee of the Board of Directors, American Association of Advertising Agencies, formulated a few days ago a resolution which not only summed up the distribution problem as we so often have done, but used language of similar force and directness, as indicated below. We congratulate them for joining the ASME, the Chamber of Commerce of the U. S. and other national organizations in full recognition of the importance of distribution.

AAAA now RESOLVES

Whereas distribution is the term used in American business to include all the activities employed in finding customers for goods and services and in moving goods, geographically and through the channels of trade.

Whereas distribution, nation-wide and localized, is a major and distinctive feature of our American economy, providing employment for more people than are engaged in manufacturing or farming.

Whereas enlightened business leaders are convinced from experience that successful distribution is also the key to a prosperous economy and high general employment. For when buyers are induced to buy, goods are moved, services are rendered, factories and farms are kept busy and employment is maintained.

Whereas our production plant is already the most highly developed in the world, and our volume of goods and services is the highest, and our potential volume is also the highest, so that we must now look to *greater and more efficient distribution* for higher employment and a *steadily rising standard of living.*

Whereas the processes of distribution thus need *full and favorable public understanding,* so that they may be constantly encouraged and improved and may attract our best minds and resources, comparable to the attention long given to production.

Therefore, Be It Resolved that the American Association of Advertising Agencies shall strive to promote widest understanding of the importance of distribution in our American economy, and

Be it further resolved that we shall urge upon all concerned the *need for active attention to distribution:* by industries and companies in their plans and their communications with the public; by educators in their textbooks and classrooms; by government in its councils, and

Be it further resolved that we shall urge full attention to advertising as a part of distribution; for advertising is the counterpart in distribution of the machine in production. By the use of machines, our production of goods and services has been multiplied; advertising multiplies selling messages and appeals; hence advertising has a major opportunity and responsibility for moving goods fast enough and in large enough quantities that our economic welfare may be served.

DA SAID

October, 1943 (editorial)

"Until the distribution of essentials, on a world-wide basis, is made more equitable, more efficient and more economical we cannot have any lasting peace or sound prosperity."

November, 1943 (editorial)

"Distribution is industry's biggest problem. It dwarfs all others." "As we have stated before on this page, and as we state each month on our contents page, more efficient and economical distribution is the present major problem of modern business."

January, 1944 (editorial)

"Nothing comparable (to efficiency and economy of production) has ever been done in the field of distribution."

November, 1944 (editorial)

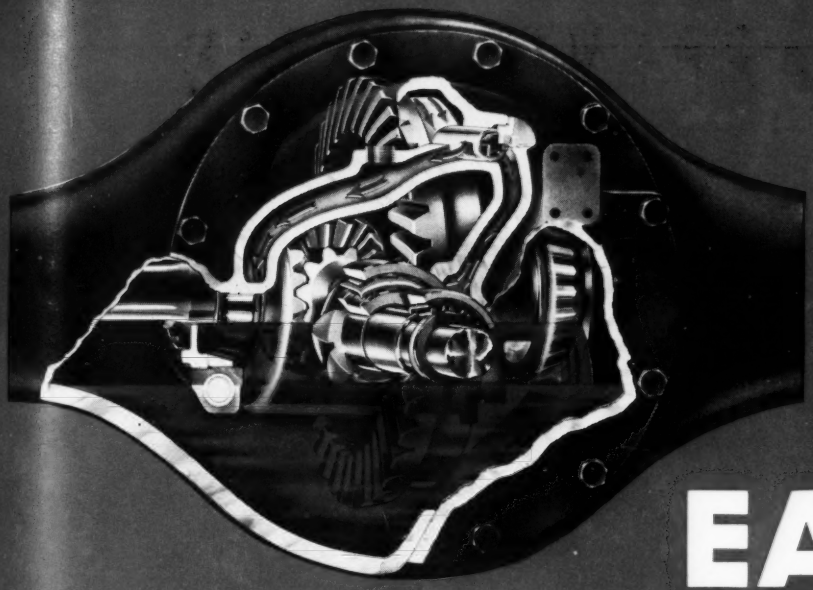
"Consequently, as we have had occasion to say before, we suggest again that a clearer understanding of the inter-relation of the parts to the whole is essential if broader concepts of distribution are to be appraised more intelligently and more profitably."

June, 1945 (editorial)

"With respect to distribution, our concept is that it embraces all activities incident to the movement of all goods in commerce."

June, 1945 (editorial)

"The need for (a clear understanding of distribution) was never more urgent than it is today throughout American industry. The reason is simple and basic: so that there may be more things for more people through more efficient and economical distribution."



EATON
2-Speed Truck
AXLES

Last Longer because Moving Parts are Always Thoroughly Lubricated

More Than a Million Eaton 2-Speed Axles in Trucks Today

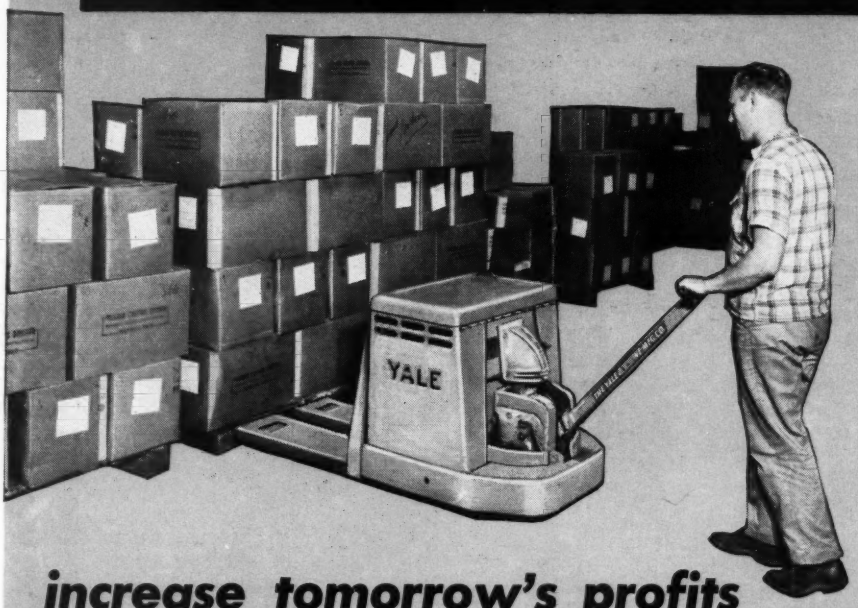
Eaton's exclusive forced-flow lubrication system starts oil on its way to all moving parts the instant the axle turns over. This protection to gears at low truck speeds, as well as high, reduces friction and wear on moving parts, adds thousands of miles of trouble-free life to Eaton 2-Speed Axles. Your truck dealer will be glad to explain how Eaton Axles contribute to lower operating and upkeep costs by embodying a balanced combination of pulling power and speed on most trucks of the 1½-ton class and larger.

Axle Division
EATON MANUFACTURING COMPANY
CLEVELAND, OHIO

EATON

PRODUCTS: SODIUM COOLED, POPPET, AND FREE VALVES • TAPPETS • HYDRAULIC VALVE LIFTERS • VALVE SEAT INSERTS • ROTOR PUMPS • MOTOR TRUCK AXLES • PERMANENT MOLD GRAY IRON CASTINGS • HEATER-DEFROSTER UNITS • SNAP RINGS • SPRINGTITES SPRING WASHERS • COLD DRAWN STEEL • STAMPINGS • LEAF AND COIL SPRINGS • DYNAMATIC DRIVES, BRAKES, DYNAMOMETERS

CUT TODAY'S HANDLING COSTS . . .



increase tomorrow's profits

Wasteful rehandling is the biggest single cause of high distribution costs. Lift and move goods in big multi-unit loads and you can cut those costs drastically. The Yale Worksaver Electric Low-Lift Pallet Truck speedily picks up and moves giant loads through narrow aisles, in and out of elevators, freight cars and motor trucks . . . no time and effort wasted in piece-by-piece rehandling!

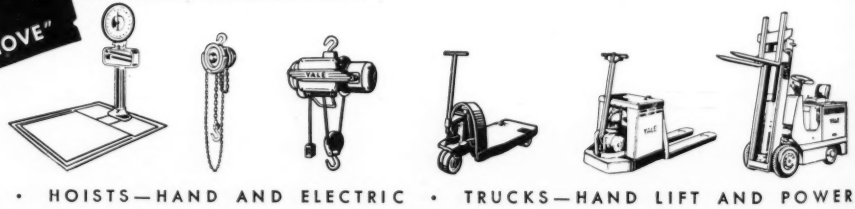
The easy-to-operate Worksaver reduces material handling to a mere "stroll and steer" operation. Dual drive control provides two safe forward and reverse speeds at the touch of a finger. Powerful safety brake assures quick, safe stops on steep ramps . . . power goes "off," brake goes "on" when steering handle is in vertical or horizontal position. Over-capacity battery provides almost two days' operation without recharging. Lift is hydraulic; cushioned lowering protects loads and floors. Capacities range up to 4,000 lbs.

Find out how the Yale Worksaver can help you cut your handling costs and increase profits. There are high and low lift types for every need. Phone or write for details today.

THE YALE & TOWNE MANUFACTURING COMPANY
DEPARTMENT M-9
ROOSEVELT BOULEVARD PHILADELPHIA 15, PA.

This Telescopic Worksaver Tilting Fork Electric Truck has a 10-foot lift . . . is only 83" high. Free fork lift of 60¾" elevates loads to this height before secondary uprights start upward. Ideal for capacity stacking in high and low headroom storage areas. Capacities: 2,000 lbs. up to 48" load length; 2,500 lbs. up to 36" load length; 3,000 lbs. up to 28" load length. 68"-high model, available in the same capacities, has 45¾" free fork lift . . . ideal for operation in and out of freight cars and motor trucks.

YALE
TOOLS THAT KEEP INDUSTRY "ON THE MOVE"



INDUSTRIAL DIAL SCALES • HOISTS—HAND AND ELECTRIC • TRUCKS—HAND LIFT AND POWER

MATERIALS HANDLING EQUIPMENT

(*Continued from page* 21)

cargo. The disadvantage is that the truck must go to several pick-up spots, as there is very little centralization in airport warehouses as yet. There is also the danger that the truck will bump the plane when backing, and it restricts movement around the plane when loading and unloading.

Where tractor-trailer trains are employed, the trailers are pre-loaded at each pick-up spot, attached to the tractor and pulled to the plane. This is a good method, as the separate trailers can be placed at the best spots alongside the plane. The small units are easy to maneuver; segregation of cargo is easy; and the tractor may be detached from the train and used for other purposes during loading and unloading. The disadvantages of this method are that, since the cargo is broken up into small units, care must be taken to prevent the loading sequence and the arrangement from being disturbed; and unless the carts are equipped with removable sides. they are not suitable for lifting by fork-lifts in loading the plane.

When the DC-3 was the only plane used to any extent by the carriers, a system of ladders, loading stands and other similar equipment was used to effect a sort of bucket-brigade method of hand loading. But as volume of cargo grew and as other planes, like the DC-4, came into use after the war, the carriers found that the old lift-and-lug method was too slow and began to concentrate on the development of mechanical loading.

Capital Airlines (formerly Pennsylvania-Central) was the first to use the portable belt conveyor. This device, which is mounted on a four-wheeled chassis with a boom raised and lowered automatically by an electric-hydraulic drive, is designed to handle a distributed load of between 750 and 800 lbs. The device was later adopted by other airlines, and in many cases cut loading and unloading time materially, reduced cargo-handling accidents, and came close to eliminating damage claims arising out of the cargo-handler's antipathy to letting anything but gravity do the work.

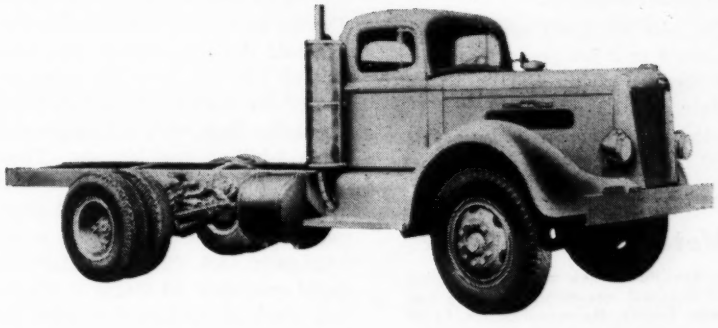
The belt conveyor has the advantage of speed, flexibility and reasonable cost. Its chief disadvantages lie in the fact that cargo must be handled as separate pieces, that large packages will not fit within side railings, and that the amount of incline sometimes limits its use.

Other airlines favored the chute, considered the fastest method yet devised for unloading separate packages. The disadvantage of this piece of equipment is that high-density packages come down too fast; low-density packages too slowly. Also, after the chute has been used to unload cargo, it has to be wheeled out of the way to make room for a belt conveyor or some other materials handling unit. This means two or more large pieces of equipment on the airport ramps—just that much more to be moved off between flights — just that much more to be maintained.

With the DC-3, the conveyor and chute were fairly satisfactory as improvements over the bucket-brigade method, but when the airlines began using DC-4s, with their larger doors and nose wheels and with the floor of the fuselage remaining level when the plane was on the ground, something else was needed. This became even more apparent when the DC-6, the "Connies" and the "Convairs" came into use with their different cargo compartments all at some distance from the ground. The Army had already shown what could be done with fork-lift trucks in handling cargo, and the cargo carriers were not slow in adopting them as a convenient, flexible system of elevating loads to any door-height. Such trucks can also be used to tow carts or other cargo containers around the airport.

From this discussion it will be seen that aircargo handling on airports has had to fit itself to various conditions not adapted to the most economical treatment. It is the general consensus that when real cargo planes are developed they should be designed to permit loading and unloading from normal truck bodies.

New Diesel Line



The White Motor Co., Cleveland, is producing a new line of diesel trucks, tractors and six-wheel units. The line features lightweight units designed to carry greater payloads in states with restrictive axle loadings. Diesel truck models include the WC-28D, with wheelbase ranges from 134 to 224 in.; the WC-32D, with wheelbases of from 146 to 224 in.; the WC-2864D six-wheel unit, wheelbases of from 176 to 212 in.; and the WC-3246D six-wheel unit, wheelbases of from 176 to 245 in. Tractor models include WC-28TD, wheelbases of from 134 to 158 in., and WC-2864TD, six-wheel unit with wheelbases of from 158 to 176 in. Models are powered by the Cummins NHB-600 diesel engine of 743 cu. in. displacement, developing 200 h.p. at 2,100 r.p.m. and a torque of 535 lbs. ft. at 1,200 r.p.m. Fuel system includes tractor oil bath type air cleaner and fuel tank of 44-gal. capacity. The muffler and stack of the exhaust system are mounted at the right rear corner of the cab. The cooling system makes use of a centrifugal design water pump with full by-pass thermostat and total radiator and engine capacity of 38 qts. Starting motor is of the 24-volt, straight-drive type, and the generator is the 12-volt, 50-ampere type with current and voltage regulation.

AIRPORTS

(*Continued from page* 18)

12 dual runways with 128 plane-loading positions.

The four-story westerly building in the central terminal area will have 30 plane-loading positions devoted to domestic airline traffic and various services and concessions which provide necessary revenue for every airport. On the ground or apron floor, there will be airline operational offices, employe cafeterias and space for the handling of air express, air freight, air mail, passenger baggage and ramp service facilities.

The mezzanine and part of the second floor will house the operational offices of the airport, the weather bureau, a Civil Aeronautics Administration office and other Federal offices. The easterly building (with 12 plane-loading positions) is devoted to international traffic. Smaller than the domestic building, but of similar design, this building has Public Health, Customs and Immigration offices and enough space for a bonded warehouse to handle air imports.

When improvements on Newark Airport are complete, this field will be able to handle a peak capacity of 120 planes per hour—three times the present capacity.

The site of 1,400 acres will be increased to 2,200 acres (less than half the size of Idlewild) to accommodate the 12 new runways, the lengths of which will vary from 6,400 ft. to 9,200 ft. A runway pattern similar in character to Idlewild will be employed. Eight runways are approached from the direction of Newark Bay or the meadow area. Four westerly glide paths are laid out to present the least interference with industrial and other buildings.

Since Newark airport is located in a marshland area, the runways are especially designed and constructed to carry the 125,000- to 150,000-lb. gross weights of present-day giant carriers. These "contained" runways are constructed between parallel walls of sheet piling sunk deep in the clay surface of the meadow. The piling will prevent the spreading of the unstable marshland foundation and uneven settling of the runway. Unsatisfactory material within this restraining area will be removed and walers (above-surface ridges) and ties installed. Compacted selected fill is placed at the underside of the pavement construction. Shoulders, also of selected fill, are constructed, and then, to complete the finished runway, a flexible type pavement is installed. Engineers say this type of runway will last 25 years.

Another feature of the airport is the fog-penetrating approach lights. Twenty-two units are mounted in a one-half degree inclined line that extends 1,650 ft. from the approach end of the runway. Alternate krypton units flash with a brilliance of some 3-billion candlepower. These are designed to penetrate at least 1,000 ft. of fog. The other 11 units, neon blaze lights, operate at lesser brilliance. All 22 units flash in rapid sequence 40 times a minute and work in conjunction with the airport's other safety devices.

The terminal area of 76 acres is similar to that of Idlewild. It is located in the center of the airport and reached by underpass. The terminal building is surrounded by a mile-long circular plane-loading arcade.

New York Port Authority officials believe that when each airport in the New York area (La Guardia, Newark, Idlewild, and Teterboro) is in full capacity operation, then, and only then will these airports be in a position to handle the tremendous aircargo potential to and from this area.

As would be expected, major airports all over the country are improving their facilities to meet present and future needs.

Chicago's Orchard Field, a new municipal airport, will spend over $4 million on land, building, runway, apron and taxi strip improvements.

Expenditures of almost $900,000 will begin the preliminary preparations for the Greater Fort Worth International Airport which will service the Fort Worth-Dallas area. The San Francisco Airport will improve its terminal area, runways and buildings with a $1,663,000 appropriation.

Completed 18 months ago, Detroit's Willow Run airport is adequate for present usage. No improvements for the immediate future are contemplated.

It must be realized, however, that the acceptance of air freight is not only a result of bigger, more dependable airplanes, better scheduling, lower rates, and the redesigning of airports to meet these needs. Other factors are also important, particularly the forwarder.

Also important is a comparatively recent organization which operates as a cargo exchange. The company, comparable to maritime exchanges, aids the shipper in finding space for his goods and also the airline which has available space.

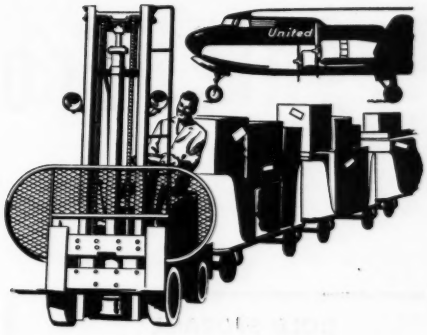
Motorized Hand Truck

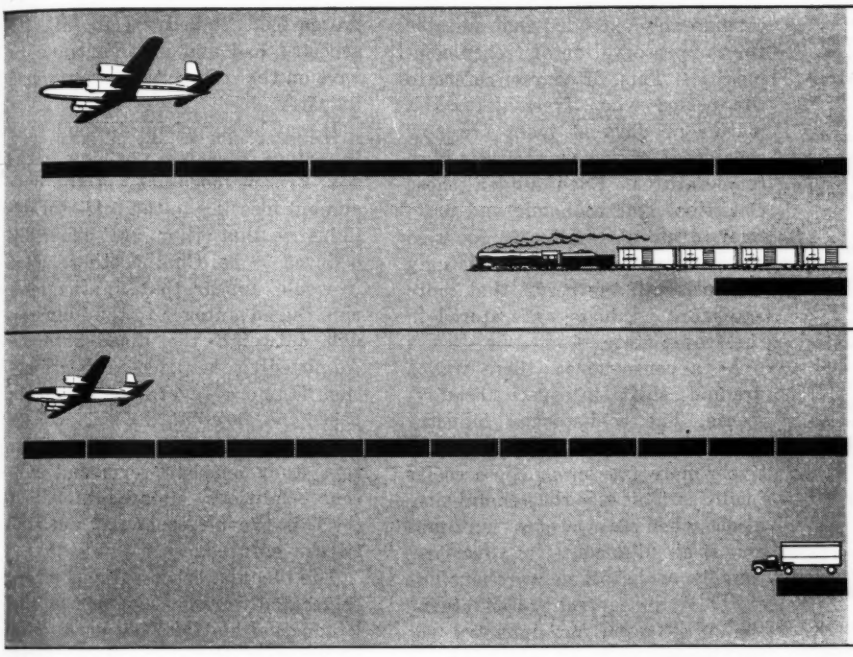
The Xpediter, a new materials handling unit designed, according to Young Iron Works, Seattle, the manufacturer, to fill what it describes as the need for a power truck smaller than any heretofore marketed, has a front carrying frame similar to a two-wheeled hand truck. Models are also available with hydraulic box clamp or forks for transporting pallets. The light weight of the machine is said to make it suitable for use in old buildings and in loading highway trucks. The unit is powered by a 3½-h.p. gasoline engine. Acceleration, brake, and reverse are controlled by a single foot pedal. Front-wheel steering plus compact design are reported to make this unit especially useful where working areas are highly congested.

Portable Belt Conveyor

The E. W. Buschman Co., Cincinnati, has recently placed on the market its new Trojan line of portable belt conveyors. Two models are featured, the Trojan 10 and the Trojan 15, with 10- and 15-ft. booms respectively. Positive tracking of the non-slip rubber belt on a ball-bearing roller bed is said to assure dependable operation. The "safety balanced" boom section, which may be removed for use anywhere, is raised or lowered with a pressure of less than five pounds. The undercarriage, designed for uniform distribution of weight, is equipped with two swivel casters for easy maneuverability. Floor locks are stated to hold the unit securely in place. Maximum load is 400 lbs. Belt width is 12 in. Available with either ½- or ¾-hp. motor.

This year, can you afford not to use UNITED AIR FREIGHT?





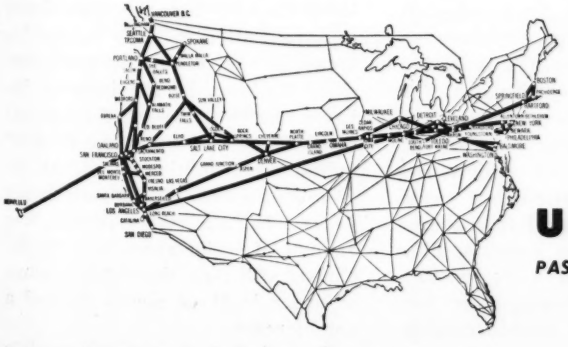
6 times as fast as by rail!

12 times as fast as by truck!

When you specify United Air Freight, your shipments move 1,000 miles or more *overnight!* Even coast to coast is a matter of hours. You save at least *four days* over the fastest surface transportation.

United's fleet of 4-engine and twin-engine Cargoliners carry up to nine tons of freight—intercity and coast to coast—as fast as four miles a minute. United's passenger Mainliners carry substantial quantities of cargo between Main Line Airway terminals as fast as 5 miles a minute!

United's speed is just what you need in today's competitive markets. It'll get you a larger share of business and more profits, because you can promise faster deliveries and dependable, economical service.



UNITED AIR LINES

PASSENGERS • EXPRESS • MAIL • FREIGHT • PARCEL POST

In Mexico, LAMSA Airlines • Member I.A.T.A.

Frozen Foods in Cold

By D. OLIPHANT HAYNES
Vice President
Merchants Refrigerating Co.

COLD STORAGE REPORT

Cold storage warehouses report a storage occupancy in public coolers of only 52 percent, as of August 1, 1949. This figure, which was three points below the record August low reached in 1940, is indicative of a general downward trend in cooler-occupancy when compared to the August 1, five-year average (1944-48) of 74 percent occupancy, and a 67 percent occupancy as of August 1, 1948.

Freezer-space occupied on August 1 of this year was also at a record low. Public warehousemen report that only 63 percent of the available freezer-space was filled, or six points below the record August low of 1940. Here, again, a weak position is indicated although perhaps not as serious as the cooler decline. The five-year August 1 (1944-48) average shows an 81 percent occupancy, while the August 1, 1948, freezer-occupancy was 72 percent.

Low occupancy prevails throughout the country, no geographic region having a cooler-occupancy above 69 percent or, a freezer-occupancy above 86 percent. However, some cities (including Minneapolis) had high occupancy.

Comparing cooler with freezer-occupancy in August, 1949, as against the 1944-48 five-year average, most areas show a significant drop in cooler-as against freezer-occupancy. For example, whereas the percent occupancy in coolers and freezers for the average period was about the same in New England, cooler-occupancy by August, 1949, was 43 percent against 77 percent for freezers. Some areas show little change from the average (East North Central, West North Central, Mountain and Pacific), and West South Central states such as Texas and Louisiana show coolers in a more favorable position today. The general picture is for a more severe drop in cooler occupancy than in freezer-occupancy. This is not only shown by the greater drop (in percentage points) in cooler-space occupied but in the fact that the region with the greatest cooler-space (Middle Atlantic) showed perhaps the greatest drop in cooler-space occupied.

Generally around June and July there is a sharp pickup in cooler-occupancy, but this year there was scarcely any. If freezer-occupancy had gained from cooler-occupancy, that would have been one thing. But freezer-use is lagging about as badly.

UNTIL quite recently, the amount of space in refrigerated warehouses available for the storage of non-frozen foods considerably exceeded that suitable for the preservation of frozen commodities. This, of course, refers to the period when freezing took a matter of days at what are now considered to be comparatively high temperatures. Even under those conditions, the economic and practical advantages of frozen foods to the *consumer* became increasingly evident, with the result that more and more products were stored in the frozen state.

As a consequence, there was a gradual shift in space requirements. The cold-storage industry found it necessary to provide relatively more freezer and less cooler facilities. This was the general situation when two events happened almost simultaneously to affect profoundly cold-storage warehousing:

(1) After several "false" starts, the quick-frozen food industry was just beginning to hit its stride.

(2) This country entered World War II.

Either of these events would have had a significant effect on the space situation of the cold-storage industry, but since they happened almost simultaneously, it is difficult to measure accurately their respective influences.

Instead of attempting to determine whether the unprecedented increase in wartime demand for low-temperature storage was due more to public enthusiasm for quick-frozen foods or more to stockpiling of foodstuffs for the armed forces, let us review the storage-space situation just prior to the war and immediately thereafter. We can then select specific commodities which were usually stored in an unfrozen state but which are now, in ever-increasing quantities, being kept at low temperatures. A study of these shifts, plus a consideration of the entry of newcomers into the storage field, will provide a clue to the effects the frozen-food industry (in all its aspects) had and may continue to have on the refrigerated-warehouse industry.

It may be surprising to some that this study reveals a puzzling paradox. Frozen foods are not the out-and-out blessing to the cold-storage industry that they are generally believed to be. On the other hand, it would appear that, in the long run, the advantages to the industry will outweigh the disadvantages. Admittedly, the long-term projection is more favorable, but it is based on *present vision;* consequently, greater stress is laid in this study on short-term and current conditions, an area in which there is greater economic and statistical assuredness.

The biennial space-surveys of refrigerated warehouses made by the Production and Marketing Administration of the U. S. Department of Agriculture show that, as of October 1, 1941, about one out of every three cubic feet of cold-storage space in public general cold-storage plants could be carried at temperatures lower than 30 deg. F. By October 1, 1947, the situation had so changed that about one in every two cubic feet could be made available as freezer space (i.e., lower than 30 deg. F.). Significant as this change in ratio is, the increase in sub-zero facilities is even more striking. In the interval between the two surveys, the amount of zero-or-lower space rose from 59 million to 83 million cu. ft., an increase of about 40 percent in six years. During this period the amount of cooler space actually declined, although the total amount of space in these plants showed a net increase.

Several factors were responsible

Storage—Blow or Blessing?

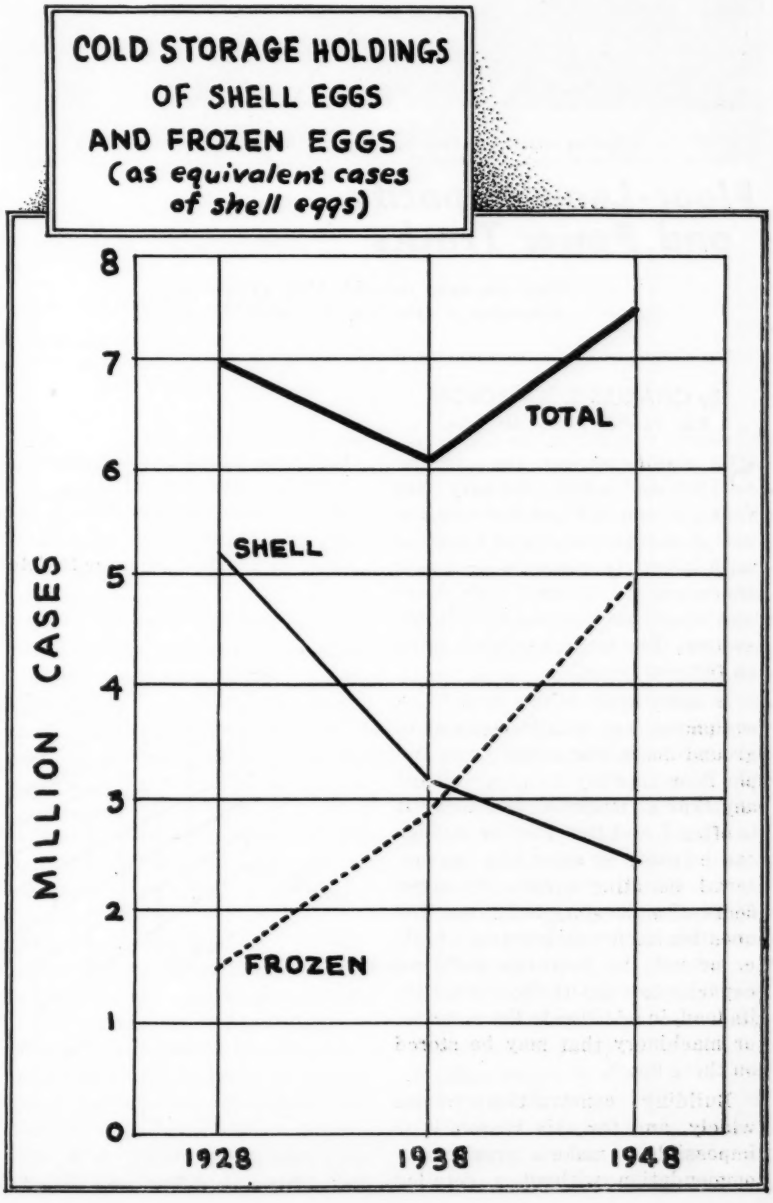
for the trends; we shall concentrate on two of them—the shift of some products from cooler to freezer and the introduction of quick-frozen foods. This latter factor was largely responsible for the increased demand for sub-zero space.

The first commodity to be analyzed—eggs in the shell—has long been important re volume in the industry. It is well known that, despite the steady increase over the years in egg production, fewer and fewer eggs are being stored. (It is outside the scope of the present study to delve into the effects of government support prices, changes from seasonal to all-year production, the increase in population and other factors. These are of primary importance in the consumer field but are not essential to the present analysis.)

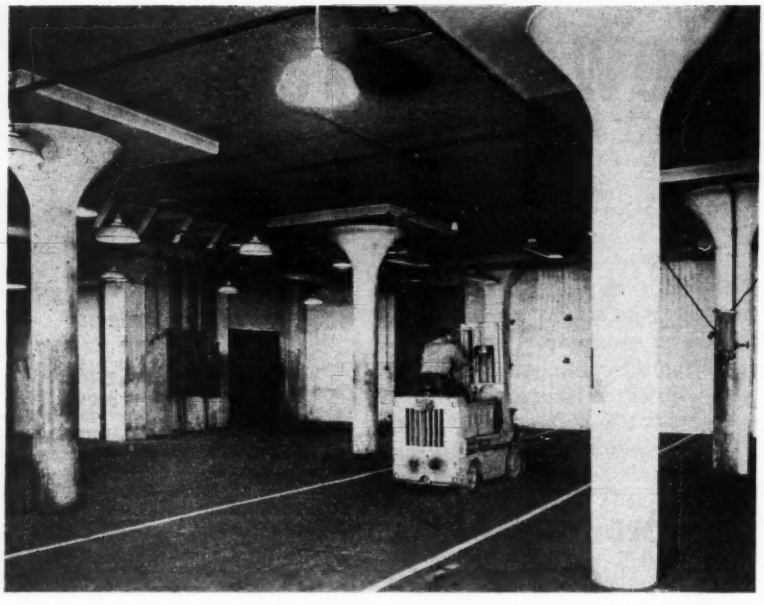
Cold-storage holdings of shell-eggs have declined from 5.3 million cases in 1928 to 3.3 million in 1938 and 2.6 million cases in 1948, or a drop of almost 50 percent.[1] This drastic decline occurred in what has always been considered one of the industry's best revenue-producers.

What about the freezers? Shell eggs are broken, and both yolks and whites, mixed in any desired proportions, are placed in cans and frozen. Long before the days of quick-freezing, frozen eggs, because of convenience and economy, became popular with bakers, mayonnaise-makers and others as a raw material. This is reflected in USDA figures, which show that cold-storage holdings of frozen eggs increased from 63.3 million lbs. in 1928 to 109.0 million in 1938 and 186.3 million in 1948, or an over-all increase of 194 percent.

(*Continued on page* 42)



[1] *The average number of cases for a given year was calculated by totaling first-of-month data and dividing by 12.*



Testing upper-story floor-load capacity with Yale fork truck.

Floor-Load Capacity and Power Trucks

Here are some valuable hints on how to determine a safe load for your floors.

By CHARLES S. SCHROEDER
The Yale & Towne Mfg. Co.

So significant are the cost reductions which industry has found it can achieve through the use of unit-load material handling with industrial power trucks, that thousands of plants, both large and small, have swung over to the system. The trend has been going on for years now.

In early applications such truck equipment was usually confined to ground floors where there was ample floor capacity to carry almost any type of machine. But today it is often found that further savings can be made by extending the material handling system to upper floors of multi-story buildings. The question immediately arises whether or not the floor has sufficient capacity to support the truck with its load, in addition to the material or machinery that may be stored on these floors.

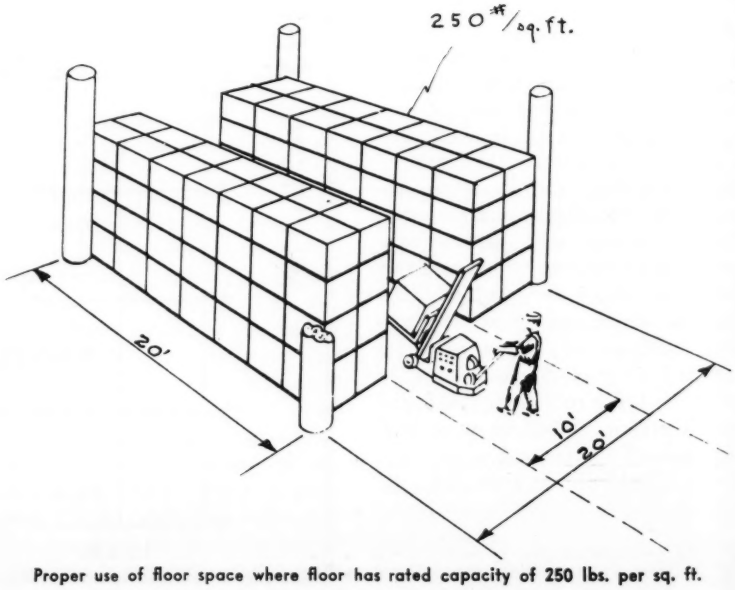
Building construction varies widely, and for this reason it is impossible to make a precise recommendation without a detailed technical study of the plant involved. Because of this, it is always recommended that a competent architect-engineer study the plant in question in order to determine the weight of truck that would be permissible under the conditions obtaining.

In order to guide the engineer, a number of studies and tests have been made, which should help him in making his computations. This subject is important to industry, and, for this reason, truck manufacturers as a group have given much study to the problem. They have consulted many technical people in an attempt to arrive at a correct solution. As a starting point with a prospective application, it is always desirable to arrive at approximate figures yourself, to determine whether it is worth while to engage an engineer for a more detailed study. The following approach will serve this purpose:

The common types of industrial power trucks in use today impose a *dynamic* load to the floor of approximately 25 percent beyond the static weight of the loaded machine. This figure has been arrived at by numerous tests in actual plants, using both actual strain measurement on full-scale structures and special test setups.

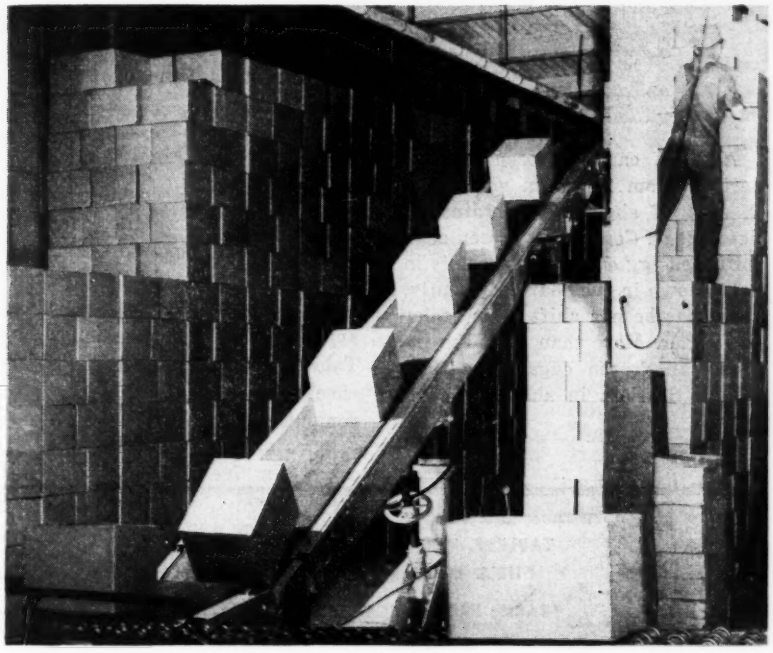
Measuring apparatus was applied to the underside of the floor to indicate deflection of the structure. The truck was driven onto the floor and stopped in the center of a bay and the deflection noted. After this the truck was driven over the

(*Continued on page* 49)



Proper use of floor space where floor has rated capacity of 250 lbs. per sq. ft.

HOW TO DISTRIBUTE



Public warehousing, a basic distribution tool, is well-nigh indispensable.

BY ARTHUR M. MARSHALL

Treasurer and General Mgr., Huck's Transfer, Inc., Springfield, Mass.

THIS is the second part of a three-part article. In Part I, Mr. Marshall, speaking of the movement of commodities, stated:

"There are many and various transportation and warehousing facilities and methods available. This paper will endeavor to describe these methods and facilities and analyze how their efficient use in the proper combination with other facilities will result in the most efficient and useful distribution service particularly applicable or adaptable to individual cases."

In conclusion the author touched upon two of the types of transportation service available:

1. The transportation service which provides store-door pick-up and delivery service on smaller shipments between a large number of points—described by Mr. Marshall as "the simplest and probably the most common type of transportation service."

2. Rail l.c.l. and truck l.t.l. service—"usually the most common method on shipments of small or medium size where no special considerations of cost or time in transit exist."

Part II follows:

A refinement in and an improvement over these types of service is what is known as express service, usually provided by Railway Express Agency, Inc. and a few other smaller companies. Express service generally includes the movement of freight in special types of cars on passenger trains and has recently been developed to include air service. This type of express service is more costly than rail l.c.l. or truck l.t.l. and its principal advantages are speed and special handling.

An important type of transportation facility is parcel post, which is operated in conjunction with the postal service. Parcel post is most efficiently adapted to the transportation of small packages to one or many destinations throughout the country. The procedure in connection with parcel post has been greatly simplified to the point that such shipments can now be handled with ease and dispatch. One of the most attractive features of parcel post is that it provides service to almost every city and town.

Another important type of transportation facility is the pipe line. This type of service is highly specialized and is used in the movement of large volumes of petroleum products and natural gas from principal sources of supply to storage or refining facilities at key distribution points. The use of pipe lines is increasing for the transportation of petroleum products from water terminals to inland points. Pipe-line transportation is confined to the mass movement of bulk liquids or gases and does not generally affect the transportation and distribution of the finished products of industry.

Another type of transportation facility which is growing in both volume and adaptability is air freight. The rapid development of air freight during the past six or

(*Continued on page* 64)

FROZEN FOODS IN COLD STORAGE

(*Continued from page* 39)

A 30-lb. can of frozen eggs is derived from 24 dozen shell-eggs. A case of shell-eggs contains 30 dozen eggs. Converting frozen eggs into shell-egg equivalents results in data shown in the chart. Evidently, there has been a shift from cooler to freezer. More than this, the increase in frozen eggs more than offsets the loss in shell-egg holdings.

Switch

What about the economic significance of the foregoing changes? Has the public cold-storage industry gained or lost by the "switch" (a switch which is less real than apparent)? This is clarified by Tables 1 and 2. Table 1 is a reference table used as the basis for computing Table 2.

TABLE 1. REFERENCE DATA ON SHELL-EGGS AND FROZEN EGGS

	SHELL-EGGS	FROZEN EGGS
CONTAINER		
Kind	Case	Can
Dozen eggs	30	24
Gross lbs.	55	32
Net lbs.	45	30
Cu. ft.	2.4	0.8
CARLOADS		
Dozen eggs	18,000	28,800
Containers	600	1,200
Gross lbs.	33,000	38,400
Net lbs.	27,000	36,000
WAREHOUSE TARIFF RATES (New York City, 1948)		
Handling (per case)	12.0c.	5.4c.
Handling (per cwt. net)	26.7c.	18.0c.
Mo. storage (per case)	10.0c.	6.3c.
Mo. storage (per cwt. net)	22.2c.	21.0c.

TABLE 2. THE RESULT OF STORING SHELL EGGS AS FROZEN EGGS

(BASIS: FROZEN EGG HOLDING 1948)

AVERAGE HOLDINGS	Equivalent Shell Eggs	Frozen Eggs	Percent Difference
Pounds—gross	273,350,000	198,770,000	—27%
Net	223,650,000	186,347,000	—17%
No. of containers	4,970,000	6,211,567	+25%
No. of carloads	8,283	5,176	—38%
ANNUAL RECEIPTS			
Pounds—gross	820,050,000	596,310,000	—27%
Net	670,950,000	559,041,000	—17%
No. of containers	14,910,000	18,634,701	+25%
No. of carloads	24,849	15,528	—38%
ANNUAL REVENUE			
Handling	$1,789,200	$1,006,275	—44%
Storage	5,964,000	4,695,948	—21%
Total Charges	$7,753,200	$5,702,223	—26%
AVERAGE STORAGE SPACE			
Square feet	2,919,884	1,140,612	—61%
ANNUAL STORAGE REVENUE PER SQUARE FOOT			
Dollars per sq ft	$2.04	$4.12	+102%

Table 2a. COLD STORAGE HOLDINGS OF SHELL EGGS AND FROZEN EGGS AS EQUIVALENT CASES OF SHELL EGGS

Average number of cases held	1928	1938	1948
Shell eggs	5,293,000	3,257,000	2,602,000
Frozen converted to shell	1,689,000	2,908,000	4,970,000
Total cases of shell eggs	6,982,000	6,165,000	7,572,000

Table 2 is based on certain assumptions which will now be explained. It has been taken for granted that all eggs received frozen would have been stored as shell-eggs. This assumption will be discussed at greater length later; for the time being, let us grant that it is true. Liberty was taken with revenue figures, which were calculated on the tariff charges prevailing in New York in 1948. It is scarcely necessary to say that these figures do not hold for the country as a whole; however, modification for a given charge is simple enough. Furthermore, it was assumed that both kinds of egg-products are held in storage an average of four months, implying a thrice-yearly turnover.

Turning to Table 2, there appears to be a "healthy" reduction in gross weight relative to net weight. The egg case is bulky and heavy, and there is a decided saving in tare when eggs are stored in cans. But the warehouseman doesn't look at it quite that way. The reduction in unit-weight means that the same eggs, when frozen, require 25 percent more containers than when in the shell. Even allowing for the fact that it is some-

(*Continued on page* 70)

TERMINALS

(*Continued from page* 19)

bility to a particular mode of handling.

1. By tractor-train to plane; from ground level to loading-door level by electric-powered portable conveyor; from loading door to plane interior by conveyor.

2. By Ford high-lift truck directly to loading-door level of plane; from loading door-level to plane interior by conveyor.

3. By fork truck alone or by fork truch in combination with standard highway truck. This method applies essentially to palletized freight. The fork truck, when working without the highway vehicle, moves back and forth between the terminal and the plane. When a highway truck is utilized, the fork truck remains at the plane, and the former makes the trip back and forth.

Truckload freight, which consists mostly of garments being shipped west by manufacturers in New York City, will load directly from highway carrier to plane, bypassing the weighing operation inside the terminal. The company just takes the shipper's word for the weight of such shipments.

As the loading operation begins to shift into high, the control agent, a sort of jack of all trade winds who's expected to keep his eye on the plane, the freight, the terminal and the weather all at the same time, will be in communication with the plane via walkie-talkie or short-wave radio. One of the more spectacular features of the new terminal is an office-to-terminal communication system designed to change the control agent from a leg man to a voice man. Formerly, the only way the control agent could check on the progress of plane-loading was to get up from his desk and trot out to the plane to take a look. In a heavy-lift operation his constitutionals might take up the better part of an evening. Now, without leaving his office, he will be able to feel the pulse of an entire loading operation at the flick of a switch.

Whatever type of loading operation the control agent may be contracting, on any given future evening, however, Mr. Downing feels that it will mark a firm step forward from the system of loading under which American has operated at Newark in the past. Under the old system the line made use of an extended loading dock standing in the area now occupied by the terminal. Planes would be spotted up against the dock and the freight loaded directly from dock to plane. It was a good system, Mr. Downing maintains, except that five or six minutes were lost in spotting the planes. Mr. Downing accords five minutes the status of several lifetimes.

Having eliminated the old system of loading, American now seems bent on getting rid of the new. Before the first package had made the journey from truck dock to plane interior, Mr. Downing was thinking in terms of knocking a side out of the terminal to make way for something new. The latest apple of Mr. Downing's mind's eye is an electric-powered endless belt conveyor capable of handling 11,000 lbs. simultaneously between terminal and plane, and vice versa. Already in the planning stage, the conveyor would have an all-weather cover of canvas or sheet-metal 72 in. above the belt. Present plans call for an extended length of 80 ft., a width of 52 in., and incorporation of a hydraulic-hoist mechanism at the end of the conveyor making the incline from belt-level to loading-door level. The projected conveyor, which Mr. Downing feels would pay for itself in less than a year, could be retracted when not in operation.

If and when American Airline officials give Mr. Downing the nod to go ahead with his conveyor, the planes at the end of it will be converted DC-4s. Eighteen of these all-cargo ships now carry about 60 percent of the company's freight; the other 40 percent travels in combination planes.

In converting its DC-4s from passenger ships to cargo carriers, American did more than rip out the seats; it redesigned the entire plane interior with a view toward removing all obstructions in the way of maximum space utilization, worked out a new cargo-tie-down system which utilizes a combination unit composed of a wire rope with a tensile strength of 3,000 lbs. per sq. in. and a snugging device for purposes of tightening, and installed a carbon dioxide fire-prevention system which would enable it to alter completely its method of interior loading.

Under the system of loading formerly employed, an aisle was left in the freight compartment—either down the middle of the compartment between two rows of freight. or at one side—so that if fire broke out among the cargo, the crew could make its way to any part of the compartment to fight it. Retention of aisle-space, of course, meant loss of cargo-space. In an attempt to maximize its cargo-capacity, the line installed an overhead CO_2 system which would permit solid loading, owing to the fact that the crew would no longer require access to the freight in the event of fire. The system incorporates a smoke-detection device connecting directly with the instrument panel in the cockpit. If fire breaks out in the freight compartment, "smoke" will register on the panel directly in front of the pilot. All the pilot has to do is turn on the gas.

Its new loading technique, the company states, has paid off with an increase in cubic capacity of from 18 to 20 percent. The present payload of its DC-4s is 19,600 lbs., but it is already shooting for 20,000. In all likelihood, the figure will not satisfy Mr. Downing.

Cold Storage Holdings of Orange Juice

The National Association of Frozen Food Packers has requested that the holdings of "frozen orange juice — straight and concentrate" be shown separately from other "fruit juices and purees" in the government's monthly cold storage report. Both the NARW and the USDA have approved of the change, and it will be put into effect shortly.

EXCISE TAX on Transportation of Property

FOR REPEAL

A SYMPOSIUM

NATURE OF THE TAX:

As stated by F. J. Krantz, general traffic manager, Pillsbury Mills, Inc., the Federal transportation tax on property was a war measure, one that "results in discrimination against long-haul traffic." (Further remarks by Mr. Krantz will be found in DISTRIBUTION AGE, April, p. 12.) The levy amounts to three percent on the transportation of property.

Ezekiel Limmer, transportation economist, U. S. Department of Agriculture, estimates that about $80 million applies to agricultural products. "To the shipping and consuming public, these sums represent increases in freight charges, on top of the steep increases that were obtained by carriers during the last few years. Rail rates have risen by more than 50 percent since the middle of 1946. To for-hire carriers, which merely collect the taxes for transmittal to the Treasury, tax collections represent no rise in earnings—in fact, to the extent that the tax leads to reductions in traffic, decreases in carrier income may result."

An excise tax on the transportation of property was passed in 1917 and repealed in 1922. The tax was reinstated in 1942 and is still in effect after seven years. The tax applies to for-hire transportation except pipe-lines and also affects accessorial services. There are certain exemptions, applying mainly to government transportation of property and to certain export situations.

Bills for repeal or modification have been introduced during several of the past sessions of Congress, but, as yet, no action has been taken. There appears to be a conviction in certain Washington circles that present sources of revenue should be maintained. This does not mean that the percents applicable to a given category are rigid. It is therefore more likely that the three percent excise tax may be modified but the tax itself maintained. However, it will take continued and persistent effort to effect any change, despite the current economy wave now in evidence.

AIR CARRIERS:

The impact of the transportation tax upon the freight hauled by common carrier transportation is uneven. In some instances, the freight charge is sufficiently high in proportion to total costs and the margin for profit so small that a slight increase in rates will drive away the business, or if this is not possible, will cause the producer to revise his production or distribution methods. On a great many commodities with narrow profit margins, such as grain, coal, sand, etc., the imposition or repeal of a tax may have an important effect. Yet these products are not likely to move by air at any foreseeable future time and so are the concern of the railroads rather than of the air carriers. However, certain products with a relatively narrow profit margin, where transportation costs represent a good proportion of total costs, have proven to be substantial air potential. Fresh fruits and vegetables fall into this classification. Here the establishment of a transportation tax easily has had two results. First, demand has been shifted in some instances to a cheaper form of transportation, such as the motor truck. On the other hand, in other cases, transportation costs have been prohibitive and traffic largely has dried up. The consumption area has been narrowed to the general locality of production.

From the standpoint of air transportation, the repeal of the tax on property-hauling is a necessity. Without such repeal it will continue to be difficult for the air transport companies to penetrate the perishables transportation market.—*E. S. Land, president, Air Transport Assn.*

SHIPPERS:

The Federal tax on transportation of persons and property was imposed as part of a wartime general revenue measure. Long-established peacetime Federal tax policy is to levy excise imposts only upon luxuries, and transportation cannot be regarded as a luxury. Therefore, whatever justification may have existed for the imposition of the transportation tax during the war, ended with the cessation of hostilities.

The tax on transportation is levied without regard to ability to pay. It is imposed on the lowest and highest valued traffic. It discriminates against the long-haul shipper in competition with the short-haul shipper. The dollars and cents amount of the tax has automatically increased with elevation of the level of passenger fares and freight rates, a result probably not intended and which could not be foreseen at the time the tax legislation was enacted. The tax adds to the impossibly heavy burden of high rates on long-haul movements and on low-valued commodities with limited ability to bear transportation costs.

The transportation tax forces for-hire carriers of all descriptions to act as tax-collection agencies and to assume the expense of accounting for and remitting amounts col-

(*Continued on page* 68)

FLIGHT

(*Continued from page* 24)

fields — and cut appreciably — the commodity horizon for air transportation, now somewhat foreshortened, could be broadened considerably.

The United States is not alone in this situation. Lines in the United Kingdom have the same difficulty, which may in part be due to a desire of the military to keep plans close to drawing boards, and prototype planes under wraps. However, the British, perhaps because the economic pressures are greater than here, have gone some distance toward at least showing commercial air lines what they may expect in the future—that future's nearness or distance depending on politico-military factors. It is somewhat safe to say that Great Britain, erstwhile mistress of the seas, is in a fair way to becoming mistress of the air. Scarcely a few years after her magnificent display of air prowess in the "Battle of Britain" over London and the Channel ports, Britain put on an air show at Farnborough this September which left airline men of the United States very close to speechless. When they recovered from the shock of seeing the latest jet and turbo-prop planes, they repeated the stock phrases "We haven't got" this and "we haven't got" that, ending up with a resounding "Good Lord, we haven't got . . ."

Apparently, Army men were less impressed than the commercial-line representatives of this country. One British spokesman pointed out that heretofore considerable buying of Constellations and Stratocruisers from the U. S. had been indulged in. Now the feeling in the "tight little isle" is that, with dollars scarce and export needs great, plus the desire to be as independent of foreign sources of supply for defense reasons as possible, the British can put the new planes on volume production bases and even invade the U. S. market.

This raises the question, hitherto whispered in certain places, of whether questions of military application or secrecy in aircraft have

(*Continued on page* 59)

Only $2.98 helps put new "sell" in television advertising

Sponsor of television show had to refilm his commercials to meet a new selling problem. New films picked up at studio 4 P.M., delivered to TV station 800 miles away 8:47 P.M. same evening. Air Express cost for 11-lb. carton, $2.98. (In *undramatic* fashion Air Express keeps radio, television or any business rolling.)

Remember, $2.98 bought a complete service in Air Express. Rates include door-to-door service and receipt for shipment—plus the speed of the *world's fastest* shipping service.

Every Scheduled Airline carries Air Express. Frequent service—air speeds up to 5 miles a minute! Direct by air to 1300 cities; fastest air-rail to 22,000 off-airline offices. Use it regularly!

Only Air Express gives you all these advantages

Nationwide pick-up and delivery *at no extra cost* in principal towns, cities.

One-carrier responsibility *all the way;* valuation coverage up to $50 without extra charge. And shipments always *keep moving.*

Most experience. More than 25 million shipments handled by Air Express.

Direct by air to 1300 cities, air-rail to 22,000 off-airline offices.

These advantages make Air Express your best air shipping buy. Specify and use it regularly. For fastest shipping action phone Air Express Division, Railway Express Agency. (Many low commodity rates in effect. Investigate.)

SPECIFY AIR EXPRESS
AIR EXPRESS
GETS THERE FIRST

Rates include special pick-up and delivery door to door in principal towns and cities

AIR EXPRESS, A SERVICE OF RAILWAY EXPRESS AGENCY AND THE
SCHEDULED AIRLINES OF THE U. S.

Decentralization Hits Big Port Cities

Causes: high land costs, defense requirements, lack of funds for development, congestion.

By EVERETT STARR

The Williamsburg Bridge, New York, a bottleneck for truck-operators, who sometimes spend an hour going from bridge exit a half-mile to North River piers.

Massed rail, heads and piers as seen from Weehawken, N. J.

MANY large port cities and centers of industry are in the embarrassing position of being the last locations considered for the creation of new manufacturing or processing plants or even for the expansion of present facilities. It is obvious that modern industrial planning is more and more calling for location — or relocation — out of the stagnated and congested city districts. Escaping from the costs of doing business in cities not geared for present-day volumes of traffic and not capable of offering the space and equable labor required for long-range planning is one of the first recommendations made by many industrial engineers. Call it what you will—decentralization or recentralization —but the ever-increasing number of concerns settling in smaller communities and in the open countryside gives overwhelming evidence that the trend is picking up speed.

This new separation from key cities by manufacturers and processors is both refreshing and disturbing. It is of vital importance to people engaged in distribution. The distributor, if he is to keep in step, must grasp the full significance of what is taking place. Many changes will be necessary. Even greater and more flexible facilities must be provided by the distribution components as demands for services increase.

Distribution has not as yet come of age, despite all that distribution has achieved through two wars and the era of peace between. Decentralization offers the chance for distribution's growth into its fullest stature by giving distributors increased possibilities of expansion and new opportunity. This means higher volume, lower costs in many cases, more modern facilities, etc.

What are the difficulties? Existing capital investment, for one thing. Each new industry and each relocated and expanded manufacturing or processing plant which rises from the districts outside the larger normal centers of commerce and industry must take into consideration new problems in distribu-

tion. Since a shift in location cannot affect hourly rates to any appreciable degree, since construction costs are not stupendously lowered—in one locality as against another—what, then, are the factors which are responsible for this migration? What are some of the facts distributors must know if they are to continue both profitable and efficient functioning? Let's get behind some of the scenes to see what is happening. Let's study a few case histories and problems.

New York City

What is happening to and in the City of New York is making the aspirin manufacturing firms very happy. Scores of firms have left the Greater New York area—some moving fairly close, some leaving the state and jumping into districts in non-adjacent states. While it is true that many new enterprises have located in New York, it is the number which has left that is causing alarm; even the world's largest city needs a stabilized payroll and business income. The exodus is the result of an illness which has long been diagnosed but never treated. Now, since the patient is definitely and visibly showing a post-war relapse from prosperity, city and civic authorities are openly worried and are attempting to do something for the welfare of New York. First aid is giving way to the beginning of proper medical treatment.

As one of the spokesmen for several engineering firms which have been relocating clients out of the New York City area put it, the diagnosis indicates internal injuries. Outmoded, old-fashioned lofts which create undue expenses because of difficulties in handling materials, both raw and finished—this is the major evil. The others include lofts which cannot be adapted to efficient assembly-line arrangements through which labor can be fully utilized; lack of storage space for both raw and finished goods, resulting in costly delays in receiving and shipping; rentals and leases so costly that the payments made would bring large equities were the same capital to be invested in specially designed plants in outlying districts. Added to these reasons for New York

(*Continued on page* 50)

*LOOK for

big reductions in costs where opportunities for substantial

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are greatest . . . in the incredibly rich field of materials handling.

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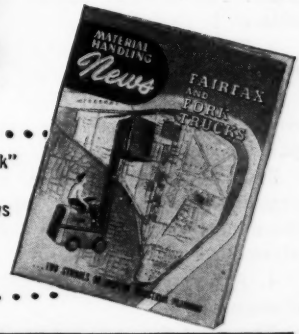


How several foremost industries have "looked to Clark" —with quick and substantial profit to themselves— is described and illustrated in Material Handling News and in Clark's exceedingly helpful motion pictures. You can enjoy the benefits of these by requesting them on your business letterhead.

CLARK ELECTRIC AND GAS POWERED FORK TRUCKS AND INDUSTRIAL TOWING TRACTORS

INDUSTRIAL TRUCK DIV., CLARK EQUIPMENT COMPANY BATTLE CREEK 11, MICH.
REPRESENTATIVES IN PRINCIPAL CITIES THROUGHOUT THE WORLD
AUTHORIZED CLARK INDUSTRIAL TRUCK PARTS AND SERVICE STATIONS IN STRATEGIC LOCATIONS

What's All the Shoutin' For?

When demand arises for Great Lakes package freighters the ships will be there to satisfy it.

HARRY C. BROCKEL, Port Director, Milwaukee, has addressed a statement to General P. B. Fleming, Chairman, U. S. Maritime Commission, on the Great Lakes "shipping problem." His plaint is that rail rates, plus the shift of many Great Lakes vessels during the war without later return to the Lakes, plus truck competition, plus imminent Canadian competition, has sadly affected Lakes activity and harmed cities and industries on or close by its banks.

How valid is his veritable jeremiad, and what can or should be done? There is no question that the inland waterways are imporant enough to warrant concern.

Mr. Brockel, in his statement, showed data to the effect that, whereas 414 bulk freighters on the Lakes in 1919 equalled 2,170,486 gross tons, only 350 equalled 2,103,402 gross tons in 1946; that 24 package freighters equalled over 87,000 tons in 1919 compared with none in 1946, etc. (other data concerning car ferries, passenger steamers or tankers are omitted). Since the trend in ships has been toward larger ones (i.e., ships with greater carrying capacity), the figures on bulk freighters are not at all out of the way. It is true that the total tonnage in 1946 dropped, but the decline was about three percent, akin to the drop in car ferry tonnage and much less of a drop than the tonnage of passenger steamers.

The total drop in dry cargo tonnage for all ships was about eight percent; the drop in number of ships was about 20 percent. This is not a very serious situation, but one that merits concern. More significant, the drop in package freighters to zero suggests general lack of demand for this type of ship service, rather than competitive pressure. Rail and truck competition may well be partly responsible, but the "depressed" rail rates he refers to are no longer depressed, nor are those of the truckers, yet little evidence of interest in package freighters exists. The best evidence of this is the fact that Commerce Lines, Inc., Mich., is resuming a package-freight service between Grand Haven and Milwaukee, using one small ship. This follows the introduction earlier of two other small package freighters to the Lakes.

Also, the question of a few percent difference in the over-all size of the Lakes fleet scarcely warrants an appeal to "national de-

(*Continued on page* 58)

What About Pallet Pools?

Exchanges may be the answer to industry's fluctuating need for pallets.

By W. B. McCLELLAND
Clark Equipment Co.

THERE has been considerable talk about the possibility of establishing and operating pallet pools. The question might be considered in these terms:

1. The need for pallet pools and the service they might render.
2. The buying motives which would prompt using the services of pallet pools.
3. The functions in a buying organization likely to be responsible for negotiations with the pool operators.
4. A suggested plan for pallet exchange.

The need for a pallet pool originates from the fact that pallets frequently are not located where they are needed. Or, they may be in the proximity of the need but owned by another concern willing to sell with no medium of making potential buyers aware of the surplus available. This condition may be due to fluctuations in production of different concerns in a local area or it may be caused by pallets moving on carriers with merchandise.

PALLET EXCHANGE PRICE LIST DATE .....

JOHN DOE & CO.

Size of Pallet	Type	GRADE "A" Purch. Price	GRADE "A" Sell. Price	GRADE "B" Purch. Price	GRADE "B" Sell. Price
48" x 40"	2 Way Reversible				
40" x 32"	2 Way Reversible				

Thus, pallet users may find themselves needing pallets at certain times with a surplus on hand at another time. They probably would deem it advisable to own enough pallets to take care of minimum requirements, then acquire temporarily the added number needed for peaks. Thus, using concerns might wish to acquire or release pallets depending upon the individual requirements. Even the federal services might be interested in such an interchange, as pallets became plentiful in one area and scarce in another. Similar conditions might prevail with carriers using pallets when transferring l.c.l. or l.t.l.

If using concerns would take interest in such a service they would expect a source to which they could deliver surpluses or from which they could obtain requirements on short notice. It seems logical to expect the user to delegate the responsibility for negotiating such exchanges to the purchasing function, whose authority for obtaining or releasing pallets would be the

(*Continued on page* 58)

FLOOR-LOAD

(*Continued from page 40*)

floor at full speed and the deflection noted. The truck was then run over an obstruction on the floor, causing a bump, with a corresponding increase in deflection. A further test was to drive the truck at full speed and come to a severe stop by applying the brakes, full power, in the middle of the bay, and the floor deflection noted. The load was raised and then lowered to the floor at full lowering speed, and the deflection of this impact noted. In all of these tests the maximum deflection noted was 25 percent in excess of the deflection caused by a loaded truck standing still. From the data thus compiled it is our judgment that a factor of 50 percent be allowed as a safe figure for the increase of dynamic loading over static loading.

An industrial truck does not exert its full weight at a fixed point, but distributes that weight at each of its four or six wheels, as the case may be. However, the wheelbase and the wheeltread of trucks which operate in multi-story buildings are relatively small, and for this reason we consider the truck as applying its load at a single point—i.e., exerting a concentrated load on the floor. Since the load is concentrated, it will produce a bending moment approximately double that which would be produced by a uniform load on the beam structure of the floor. By this approach it is found that on a normal 20— x 20— ft. bay our actual bending stresses in the floor slab are only approximately 85 percent as high as the computations would show if allowances were made for the actual wheelbase and wheeltread distribution. In other words, by considering the truck as applying a concentrated load, we allow a slightly higher factor of safety than necessary.

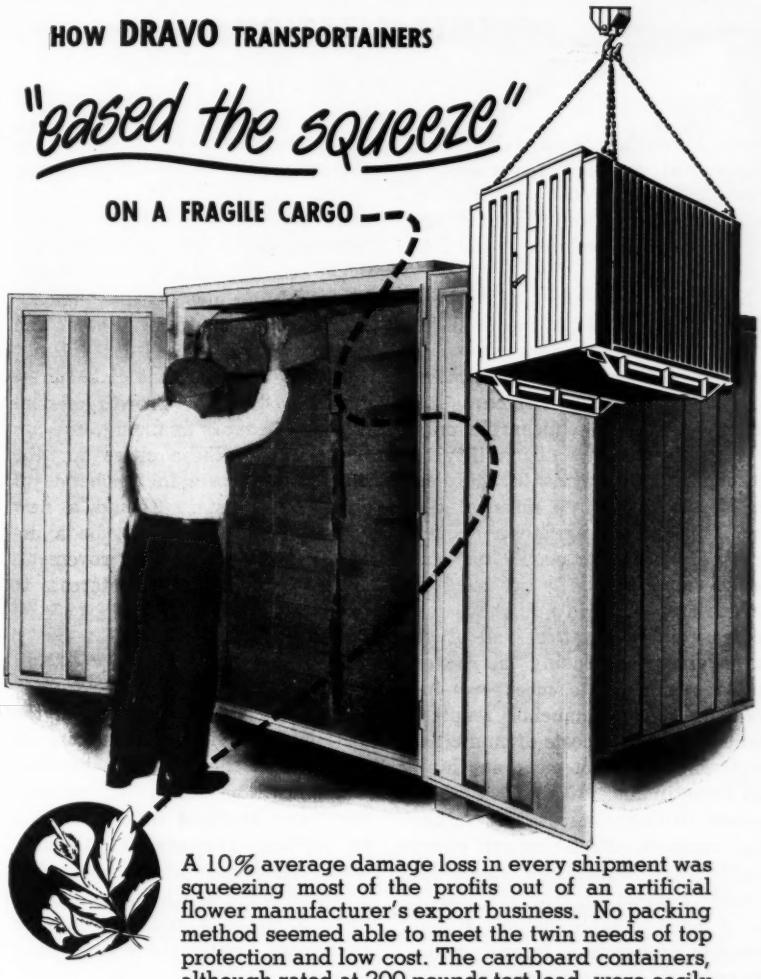
From the above we find that we have a factor of 1½ to one due to the dynamic loading, and a factor of two to one for the concentrated load conditions, making an over-all factor of three to one for the

(*Continued on page 53*)

HOW DRAVO TRANSPORTAINERS

"eased the squeeze"

ON A FRAGILE CARGO



A 10% average damage loss in every shipment was squeezing most of the profits out of an artificial flower manufacturer's export business. No packing method seemed able to meet the twin needs of top protection and low cost. The cardboard containers, although rated at 200 pounds test load, were easily crushed, or might be turned upside down, damaging the contents. Large master cardboard cartons lasted only one voyage, and wooden cases only three . . . and neither properly shielded the fragile cargo.

Then the shipments were placed in Dravo Transportainers—and loss from damage dropped from 10% *to absolutely nothing!*

Each Transportainer accommodated 165 cardboard boxes of flowers, consolidating the load and simplifying handling problems on pier and on shipboard. Unloading time was cut in half. A substantial sum was saved through elimination of the purchase and packing of master cartons, and a further small but important saving was made because of the reduction in cubic. Like dozens of other shippers, this manufacturer found that many major shipping hazards disappear, when a product moves in Dravo Transportainers.

Dravo Transportainers are welded steel construction, with a capacity of 275 cu. ft. of cargo. They can be handled by crane or industrial trucks, may be tiered, and provide dependable protection against damage and pilferage. More than 25 leading carriers now have Dravo Transportainers in service. Ask your shipping company about them.

DRAVO CORPORATION

NEVILLE ISLAND, PITTSBURGH 25, PA.

Eastern Sales Offices: 30 Church Street, New York 7, N. Y. and Wilmington 99, Delaware. *Shipyards at Pittsburgh, Pa., and Wilmington, Del., Export Associates: Lynch, Wilde & Company, Washington 9, D. C.*

DRAVO

DECENTRALIZATION

(*Continued from page* 47)

City's losses are such factors as 100-percent assessed tax rates, a volcanic labor pool, restrictive codes, politics and a shift of effective money resources to the Potomac.

Because several other cities have these same troubles, it may well be wise to examine both the problems and the possible remedies. Empty lofts, subsequent to removal of firms from the city, mean not only loss on investment and inability to meet mortgage payments but also an almost immediate physical depreciation of the buildings. Since taxes are based primarily on real estate valuations, it is not hard to go one step more to find that each decrease in value affects all other taxpayers by increasing their rates and assessments to meet ever-increasing civic financial requirements. Increased costs of municipal governments cannot mean anything but a continuance of high tax rates. Losses through empty loft buildings must be offset through gains realized on higher tax rates assessed against more attractive, hence more valuable, industrial and business properties. In such cities the creation of an efficient and well-planned industrial plant merely invites more taxation. This is both unhealthy and unwise, and more than ever hinders the growth and prosperity of a city.

To preclude just such a situation, more and more attention is being given the adaptation and remodeling of lofts for those many smaller industries and businesses which will be easily and efficiently inducted into loft buildings. While the larger industries requiring large tracts of land and large-scale transportation facilities are being quietly led into the city's marginal areas, the zoning restrictions, traffic regulations, tax-rate structures and other factors are being considered to give all possible incentive for as many as possible to move into or remain right in the loft districts.

Increased emphasis on labor relations and the creation of qualified commissions to assuage labor-management grievances mean larger budgets and more political authority. This means an additional burden on taxpayers. Greater efforts are being made to make it both attractive and profitable, and labor relations planning is becoming more and more an accepted influence by both organized labor and management.

Despite the fact that little can be done to offset the growth of centralized Federal financing, the investments in these cities for the most part remain in the hands of private interests. Should a new warehouse, for instance, be a desirable and necessary improvement, it remains for private interests to construct it.

Semi-Official Agencies

Studying the big city from the distributor's viewpoint almost at once limits the stage to but the transportation scene. It remains for those engaged in distribution to perform the services through which people are clothed and fed, and commerce and industry depend upon a two-way constant flow of equipment, materials and finished

goods. No other city in the world is as vulnerable as New York, since it depends for its very daily bread upon water transportation. A mere 3500 workers can inflict serious paralysis on a city of 8.5 million souls. With but two exceptions, all transportation depends upon water and related facilities like bridges and tunnels. These exceptions are the New York Central and New York, New Haven and Hartford Railroads, and the newest giant of transportation—the airlines. Besides vulnurability, there is congestion. In New York it is more than a matter of the obsolescent piers and warehouses. It is more a matter of friction—too many vehicles on impassible streets, too many railcars on too few sidings, too many demands without adequate facilities for efficient handling. To remove these hazards is of course partly a municipal responsibility. Yet without increased taxation or decreased attention to other essential civic responsibilities, such changes are vainly urged before countless hearings or are hurled at political rallies.

It is here that a private corporation, given certain tax-free exemptions and certain municipal privileges, often takes over. Created as a semi-official commission at the beginning for purposes of study and resolution, through the installation of principal stockholders and its officers and board members, the temporary unit gives way to an independently autonomous agency which raises its own money through sales of its own bonds to provide facilities of use to the people of the city authorizing the agency's creation and functions. The amount of responsibility shifted by the city to such agencies depends upon the willingness of the people to endorse such "authorities or commissions" and their willingness to make it profitable, through tolls and tax exemptions, for such agencies to operate as strictly free enterprise business. Despite this, the Port of New York Authority, to give one example, has limited power and limited finances.

The providing of adequate warehousing, piers, terminal buildings and the elimination of time-consuming traffic jams and removal of the many other hazards of doing business in a big city—these rest not only with the quasi-official agencies but with the city and with the private interests to whom efficiently functioning commerce is of vital importance. Recent innovations, such as the construction of a central trucking-transferring terminal in the busy downtown section of Manhattan, have indicated that the city is stepping in the right direction. Loaded as it is with its limited financial resources, it is nonetheless actively at work on pier improvements, traffic aids and the providing of added lands for more commercial facilities. While these top-priority projects have

been helpful, the overhanging questions of ECA and foreign trade have hindered private investment. Reasons for not being too enthusiastic in making major investments —or of backing such investments— have already been touched upon. In addition to the fact that the big cities are losing ground in new industrial and commercial assets, the costs of making the big cities attractive are considered as bad risks.

Another major thorn in the side of such cities as New York is the formerly complacent cities such as Baltimore. Here we can find a port history going back some 200 years, but coupled with the historical background is applied "know-how" and investments geared to present and future competitors. Throughout most of 1947, Baltimore led in export tonnage and remained always in the Big Four in import tonnage. Its worldwide steamship connections doubled within one year (1947), and ECA shipments, especially grains, have kept this a busy port even in recent months. Coupled with favorable rail and trucking tariffs as incentives to shippers have been the efforts of active world-trade bodies and civic and city planners. Availability of water-front factory sites and abundant storage warehouse facilities present two attractive lures to manufacturers and processors. In 1946, the last year for which complete data are available, capital covering new and expanded industries amounted to $65,000,000, with thousands of workers added to already steady payrolls. Chief reasons for Baltimore's growth can be traced to active participation in removing many of the headaches which continue to plague New York City. A central agency, the Export-Import Bureau, has since 1924 co-ordinated the efforts of city, state, Federal and business officials in creating the progress through which Baltimore's future could be planned and capital secured for future projects.

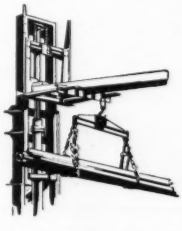
While it is true that many industries, particularly textile manufacturing and processing, have shifted into the South, other factors have given such ports as Charleston, Norfolk, Wilmington and Savannah a more important role than

* At A. O. Smith Corporation it's AUTOMOBILE FRAMES

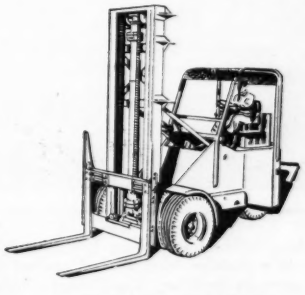
simple as ABC with ROSS Carriers

Big-load transportation in and between plants need no longer be a problem! Now, the ROSS Industrial Carrier extends the benefits of unit-load handling to the farthest corners of plant and yard—and beyond. It increases the effectiveness and capacity of bridge cranes. It speeds movement of materials between areas served by fixed handling equipment. Load-length is no problem. It maneuvers fast in congested areas, on any surface. Self-loading and unloading, it requires only a driver.

Many plants know it's simple as A, B, C to solve big-load problems with ROSS Carriers. Capacities, 10,000 to 30,000 pounds . . . Write for details.



ROSS Lift Truck BOOM ATTACHMENT
Permits lift truck to be used as auxiliary crane. No interference with forks. Easily detachable . . . Other attachments: scoop, ram, snowplow, winch, side-shifter, slope-piler, etc.



ROSS LIFT TRUCKS
. . . team-mates of the famous Ross Carriers. Capacities, 5,000 to 18,000 pounds.

Rely On ROSS

THE ROSS CARRIER COMPANY
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Direct Factory Branches and Distributors Throughout the World

ever before. This amounts, almost, to outright dispersal of commercial facilities for strategic purposes, and yet it is more likely the result of the inequalities of rail and trucking tariffs coupled with the lack of demand for consumer goods in the Northeastern centers of high population. Shifting influences created by a starving world have led shippers to choose those ports which offer the best possible point of departure and arrival.

In shipping mileage, it is no longer necessary to use the Port of New York; modern materials handling equipment can do wonders even with limited docking facilities. While heavy industrial emphasis will remain in the northern states for a considerable number of years, the importance of the industrial South presents ever dangerous aspects to such ports as New York. Distributors are already keenly aware that flexibility is a most desirable asset, and the routes available through southern states have greatly increased. Railroad and trucking facilities have expanded to keep pace with changing demands, and portside activities have not had to be curtailed for lack of ready capital.

A Cleveland Tradition

It becomes necessary to consider Cleveland as a comparatively young city, although it can well be proud of its more than 150-year history. From the time General Moses Cleaveland established his tiny trading post to the early decade of this century, Cleveland's growth must be credited largely to geography and iron ore. Because Cleveland enjoys a position on Lake Erie and is in a straight line from the iron ranges of Minnesota to the coal fields of Pennsylvania, it is natural that Cleveland's industrial development has been greatly diversified.

As our nation's sixth largest city and as one of the top ports of the Great Lakes, however, this city's importance results partly from well-executed civic planning and capable civic leadership. Good government, acceptance of community welfare as a part of every-day business, lack of a single overriding financial influence—these are three additional factors making for Cleveland's present-day importance.

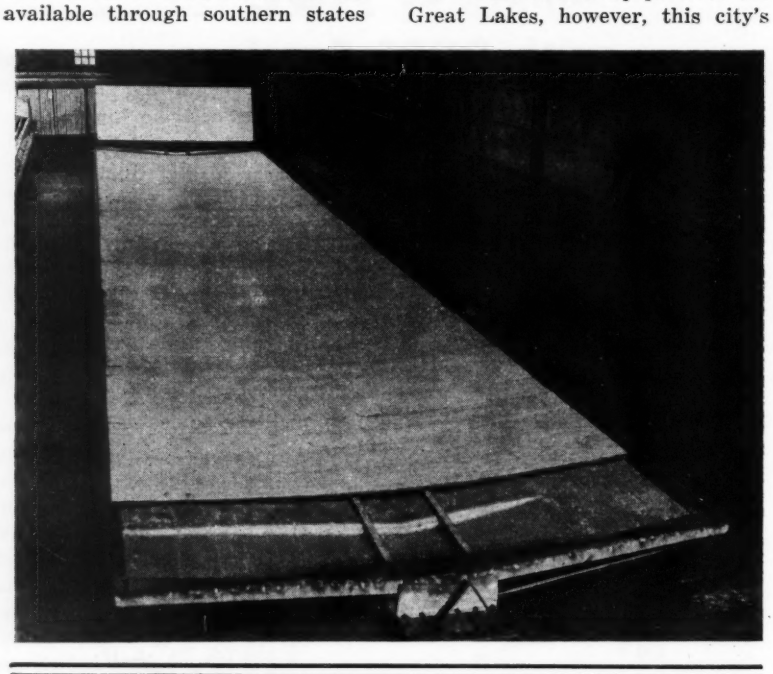
Good government has been traditionally passed from such men as Newton D. Baker and Samuel W. Mather to men like Frederick G. Goff, men, who, upon countless occasions, have considered their responsibility to the community paramount. One example of progressive leadership is the fact that this is the birthplace of the Community Chest idea. Another proof may be revealed by even a hurried inventory of its Civic Center facilities.

It is a Cleveland tradition that ready capital be made available to Cleveland improvements of both a commercial and cultural nature. Civic planning has, therefore, been possible for current improvements with anticipated demands left an easy possibility.

Through co-ordinated planning and acting, Cleveland's commerce facilities have attracted more and more volume with each succeeding year of development. All forms of transportation have received financial support from both private, municipal and state and Federal sources.

Though more than 500 miles from the nearest ocean, more than 500 firms are active members of the Cleveland World Trade Association. This affiliate of the Chamber of Commerce has received cooperative action from labor, management and capital. One result of this group's efforts has been indicated through the city's imports, which have tripled in the past 10 years. In addition to direct shipping—both importing and exporting — many Cleveland firms have established branch offices and plants in foreign countries to bypass brokerage and commission agencies. More than 76 ships of foreign nations — mostly Dutch, Norwegian and Swedish — have made Cleveland a regular port of call, although the port is ice-locked three or four months each year.

(*Continued on page* 60)



One western railroad is making box cars lighter by the use of plywood interiors, and is therefore in a position to make fuel savings and other savings which can be passed on to shippers using its facilities. The Chicago, Milwaukee, St. Paul and Pacific, a major western trunk line, has been using plywood as a major factor in reducing freight-car weights. This plywood is replacing tongue-and-groove linings. While the cost of plywood is initially greater, use of large sheets eliminates much of the blocking and nailing strips formerly used. In addition, the sheets take abuse more successfully.
The Milwaukee Road uses these wood sheets for both walls and ceiling, using light metal channels with plywood inserts to fasten the ceiling lining. When the sections are joined, a smooth and unbroken surface results throughout the length of the car. The railroad has used a method of applying the wood sheets which permits removal of flooring, sides or ends without affecting each other. Standardization is effected in sizes by adopting one standard length of lining for both 40- and 50-ft. cars.

FLOOR-LOAD

(*Continued from page* 49)

stresses in the floor slab imposed by a truck in operation, over that which would obtain on a uniformly loaded floor slab.

Our next problem is to find what portion of the floor slab is devoted to carrying the weight of the loaded truck. This may be determined by considering the area of space devoted to aisle in one bay. For example, if we assume a bay having 20— x 20— ft. column spacing in which we allow an aisle 10 ft. wide, we would have an aisle area of 10 times 20 equals 200 sq. ft. of unloaded floor area in one bay devoted to support of truck. If the floor has a rated capacity of 250 lb. per sq. ft. this would allow us to store a load of 250 x 200 = 50,000 lb. of static load in this aisle space. This aisle space need only support the moving truck, hence we can determine the permissible loaded weight of the truck by taking 50,000 lb. and dividing it by a factor of three, which equals 16,600 lb. as the available floor capacity for the truck (see diagram).

This calculation assumes that the area at either side of the trucking aisle is not loaded beyond the rated floor capacity, either with goods or production machinery. Two or more trucks could pass each other over this area in a given bay at one time provided the combined weight of trucks did not exceed the computed total, which in the above example would be 16,600 lb. This point is very important in considering floor capacities, and shows up more particularly in front of elevators where it is often found that one truck will be coming off the elevator before the second truck is run onto the elevator. For this reason, particular attention should be paid to the area in front of elevators when designing new buildings or reinforcing old buildings.

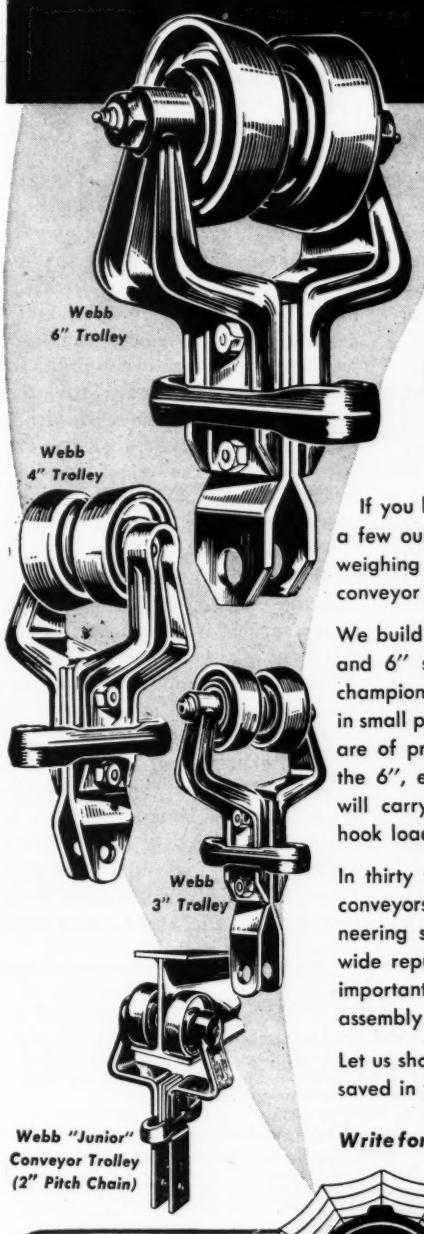
A further caution in connection with the floor slab in front of an elevator arises from the facts that (1) it usually gets more traffic than other sections of the building, (2) the fatigue load at this spot

(*Continued on page* 60)

slash HANDLING COSTS

with WEBB OVERHEAD CONVEYORS

OUNCE TO TON LOADS



If you handle small parts and products of a few ounces weight . . . or big assemblies weighing tons — there is a Webb overhead conveyor which will cut your handling costs.

We build overhead conveyors in 2", 3", 4" and 6" sizes. The two inch "Junior" is a champion in knocking out high handling costs in small parts and assemblies. The 3" and 4" are of progressively greater capacity—and the 6", equipped with a double load bar, will carry nearly 5,000 pounds per single hook load.

In thirty years that we have been building conveyors into industry, Jervis B. Webb engineering skill and experience has gained a wide reputation for quality unexcelled—for important savings in manufacturing and assembly costs.

Let us show you what can be done in dollars saved in your own plant.

Write for our Overhead Conveyor Catalog

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OFFICES IN PRINCIPAL CITIES

CONVEYOR ENGINEERS AND MANUFACTURERS

OPERATION AIRFREIGHT

(*Continued from page* 28)

The operation of a non-scheduled air line differs in certain respects from scheduled operations.

By GEORGE T. CUSSEN

Executive Vice President, Flying Tiger Line.

AIRLINE costs lie predominantly in the areas of equipment, flying operations and ground plant. Economies in equipment are limited by the competitive drive for improvement in aircraft, while the ground establishment (including runways, hangars, lighting, etc.) is largely a maintenance problem. It is in the field of operations alone that it is still possible to make substantial savings.

A cargo airline can cut down the number of small stops where density of traffic is lower. But this, while it will reduce costs per ton of cargo, is a negative approach and may be self-defeating in the end. A farseeing approach involving expansion and improvement of service to cover both lower and higher density points, combined with an intensive drive to reduce materials handling and other operational burdens is the best possible attack on the cost problem for an aggressive and wide awake airline.

It must be recognized at the outset that salaries of plane crews closely approximate a stable and even rising overhead. Consequently, efforts to economize and still maintain quality service depend upon the application of scientific methods to materials handling, routing and preparation of cargo for shipment.

Let us see how a typical major airline approaches the problem. We can start with the telephone book. Hardly a half dozen years ago, listings of airfreight lines did not exist in the classified directory. Today, the classified may very well serve as the liaison between the shipper and the air carrier.

The freight representative who answers the shipper's call will request the following data: shipper's name, address and phone number, destination of shipment, contents, weight, and special handling instructions. The representative will then advise the shipper of pickup time and plane departure time, and will point out that emergency deliveries to planes can be arranged up to 30 minutes before departure.

The cost of the shipment will be computed form a printed rate sheet and the charge of pickup and delivery service will be noted. If the shipment qualifies for a special commodity rate (applied to heavy-volume freight) the cost will be considerably less than if the first class rate prevailed.

The shipper is then given the ETA (expected time of arrival) at destination so that he can make his arrangement for final delivery. Emergency deliveries immediately upon arrival can also be arranged.

If the freight requires trans-shipment, the shipper will be given the necessary information (including rates and schedules) about the best air, rail, water or highway connection. He will also be told whether or not the freight can be handled as delivered to the next line. When this data is not readily available, the agent can get it quickly, either from information at hand, or through use of a systemwide teletype network.

Unusually heavy shipments (over 200 lb. per sq. ft.) require that the shipper skid the load in order to spread the floor-bearing weight to 100 lb. per sq. ft. The airfreight man must always be able to determine whether or not a shipment's bulk will permit it to be loaded aboard, and if it will, how it will be loaded. An ingenious graph, based on height and width, tells him if the shipment can be taken through the airplane door. Heavy-duty fork trucks and special crane equipment are available at additional cost for shipments weighing over 2,000 lb.. The shipper can also arrange through the airfreight agent for special equipment for pickup and delivery.

When the merchandise arrives at the airport dock, it is skidded down from the truck on special steel roller equipment. Freight handlers weigh it, spot the address, and load it on the proper wooden ground pallet, where it is grouped with other shipments going to the same destination.

As each pallet is loaded, a skilled fork-truck operator, especially trained to handle pallets, runs the forks of his lift under the divided bottom of the pallet. Quickly, the pallet is carried below the airplane door, run up to the door level and on to the plane floor. Another group of cargo handlers, inside the plane, unloads the pallet. Heavy freight is skidded on temporary floor rollers up the center of the airplane. A block and pulley is ready for service where loads are too heavy to be placed by hand. Heavy freight is stacked on the floor, light freight on top. Easily damaged merchandise is segregated; nothing is loaded on top of it. If pieces are small, however, they may be grouped within cargo

Sealed Van Service

The Seattle branch of Sears, Roebuck and Co. has succeeded in materially reducing its transportation costs on deluxe merchandise through Sealed Van Service, a method of shipping which is no novelty to the West Coast in the contract-operations field, but which heretofore had not been carried into common-carrier operations.

Sears has concluded an agreement with The Coast Transit, a common carrier, whereby, in consideration of the former's guarantee of substantial tonnage and its agreement to perform all terminal operations, the common carrier has established on Sears' refrigerators, radios, washing machines and furniture a volume rating based on fourth class.

That the carrier can profitably haul uncrated merchandise at fourth class stems in large degree from the fact that he is relieved of the onus of pick-up and delivery service, which, according to testimony given by carriers before regulatory bodies, accounts for from 52 to 60 percent of a carrier's cost of operation. Moreover, the Sealed Van system, which Sears, Roebuck and Co. characterizes as a profitable operation for the carrier as well as itself, frees the trucker of many of the problems of rating and billing, as a single flat rate is applied to an entire shipment.

In practice, the shipper loads and unloads a complete semi-trailer and affixes its own seal at point of origin. At point of destination the seal is removed by a Sears employe.

Specially constructed pads and covers are placed on the articles at the time of loading. The store, on receipt, transfers the merchandise to local delivery rigs, removing the pads when the goods are in the customer's hands.

nets. Larger fragile items, such as pieces of fine furniture or delicate business machines, are tied down to prevent shifting and covered with protective pads to prevent scratching.

The temperature in plane interiors is carefully controlled to protect perishable goods, such as flowers, from suffering heat damage. Pilots' temperature gauges show cabin temperature at all times, and the pilot can, through the use of temperature controls in the cockpit, heat or cool the plane during the flight. Despite this advance, however, airfreight carriers feel that more adequate means of protecting perishable merchandise must be developed. Experimentation is now going on. One line is experimenting with new portable cooling and heating units. Perishables are protected on the ground by storage in modern refrigeration rooms established at important stations.

The loading arrangement within the plane is determined by destination and stops en route. On a flight from Los Angeles to New York, for example, the freight destined for New York would be loaded first, while the freight for say, Kansas City, the first stop, would go on last. This pre-planned loading method speeds the unloading at destinations.

While the plane is being loaded on the field, clerks are airbilling the freight in the operations office. The names of consignor and consignee are written in; routings are inserted if the shipper has left trans-shipping to the discretion of the carrier; number of pieces, contents, weights and rates are entered. The last entries cover charges for pick-up delivery, insurance, and transportation tax.

Sales representatves try to establish shippers' credit before receiving cargo so that no embarrassing delays occur. Airbill clerks keep a standing list of open or prepaid account records. If a shipment comes from a source for which no credit standing has been established, the freight is not held but moved to its destination to be held there until credit is satisfied. Usually, a credit is cleared by the time the plane reaches its destina-

(*Continued on page* 66)

FIBREBOARD BOX
Attractive, low-cost. Fully enclosed, panels steel stapled to wood cleats. Superior reinforcements. Supplied flat for easy assembly.

WIREBOUND CRATE
Strength-tested, lightweight. Built-in support features. Easy handling, stacks well. Supplied flat for wrap-around assembly.

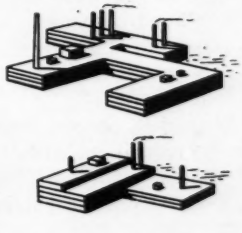
ALL-BOUND BOX
Wood veneer panels, steel wirebound for strength. Completely enclosed. Protects contents from weather, dirt.

NAILED WOOD BOX
Materials and workmanship to meet or surpass Government Specifications for domestic or export shipments.

RELY ON *American*
BOXES AND CRATES FOR ALL YOUR SHIPMENTS

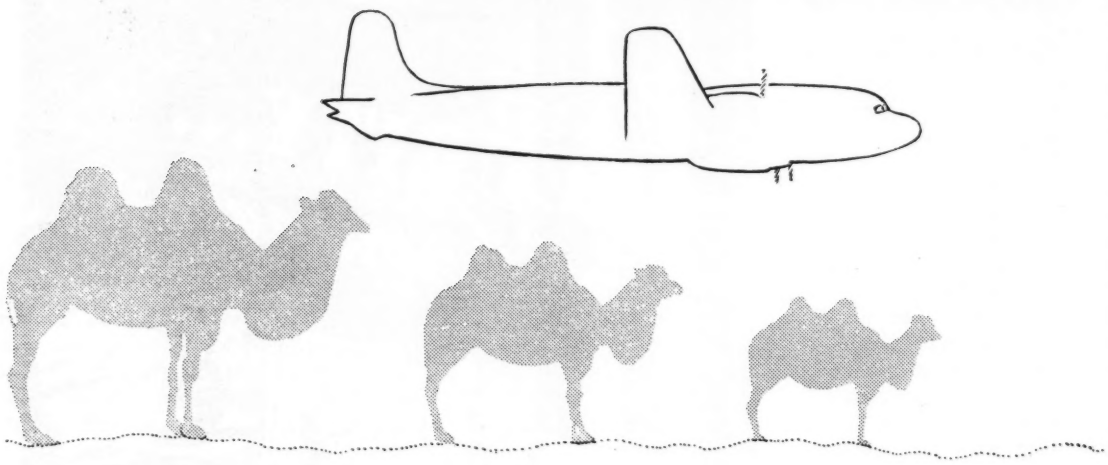
The nearest thing to shippers' "utopia": the *complete* box and crate service by American. Backed by 48 years of shipping box engineering and manufacturing, a full line of scientifically constructed boxes and crates have been developed for *all* your shipments—domestic and export. American is equipped to meet *all* your specifications; size, shape, appearance, quantity, etc., plus ample protection against severest shipping conditions. Engineered for accuracy—machine-produced for economy. A free-trial packing, with estimate, is yours for the asking. We welcome your inquiry.

TWO GREAT PLANTS (Est. 1901)
Strategically located for convenient access to all box-making necessities, main plant in Cleveland, O., and branch plant in Marion, S. C., feature most complete, modern facilities.



THE *American* BOX CO.
1901 W. 3rd Street • Phone: MAin 4221 • Cleveland 13, Ohio
Branch Plant: Marion, S. C.

THE MAGIC CARPET



Many other items, too, can sprout wings. Flying is a good way for manufacturers to "get there fustest with the mostest."

By HENRY G. ELWELL
Traffic Consultant

TENSENESS was in the air that Monday morning at the office of the Nelson Mfg. Co.

"I tell you the shipment must be in San Francisco by Wednesday morning," roared John Parker, the advertising manager.

"Yes, and here we are on the Atlantic seaboard. Seems to me you always wait until the last moment where anything urgent is concerned," retorted Bill Jones, production manager.

"Hold on there, Bill," said Charlie Brown, the general sales manager, "this situation really is critical. This shipment is for a contract job in a hotel. The roll of carpet must be delivered and laid before Wednesday night, as John just explained."

Still ruffled, Jones turned to Jack McCormack, free-lance traffic manager, and inquired: "Can we make arrangements at this late date to have delivery made in San Francisco by Wednesday morning?"

"Surely, by using airfreight," replied McCormack.

"Why not use air express?" demanded Parker.

"Well, if you want to pay about $73 per hundred pounds instead of $18 per hundred by airfreight, then we can use air express," McCormack answered.

"Actually," he continued, "the time in transit via either routing will be the same. Of course, by using airfreight we'll have to pay trucking charges to the local airport and from the airport at destination, but even with that the total cost will be approximately $22 per hundred pounds, which is much lower than the air express rate."

"Okay, Jack," said Parker. "Use your own judgment, but be sure delivery is made by Wednesday morning."

McCormack reached for the telephone. He gave instructions to the shipping department to deliver the roll of carpet by motor truck to the airport immediately. His office then made the necessary arrangements with the airfreight carrier. The consignment was delivered to the Pacific Coast customer on schedule.

As Parker and Jones departed, McCormack leaned back in his chair and smiled at Brown. "Charlie," he remarked, "it didn't take long to dispose of that problem. Despite a bit of hot temper we finally brought about cooperation. And, after all, that's the only way to get results."

"I'm wondering, though," commented Brown, "why you're opposed to air express, and in favor of airfreight."

McCormack laughed. "You're wrong. I don't favor airfreight over air express. Airfreight, in some instances is preferable, while in other cases it's better to use air express. It all depends on the specific circumstance.

"Take for example, the matter of pick-up and delivery of consignments. This service is included in the air express rate, whereas via airfreight the shipper more often than not has to pay the trucking charges in addition to the airport-to-airport rate. At times, this feature means a higher total charge on a given shipment via airfreight than by air express. It so happened that in the case of our roll of carpet the difference in rates was so widespread that even with the additional trucking charges it was cheaper to use airfreight."

"Do you think the airway carriers are taking business from the highway and rail carriers?" asked Brown.

"To some extent, yes," declared McCormack, "but the inroads are still far from serious. Also bear in mind that a considerable portion of the shipments by air carriers can be described as 'new tonnage,' that is, articles which are entirely new or those which were never moved any great distances by highway or railroad.

"Take certain new drugs, or

(Author's Note: Names of persons and company are fictitious.)

delicate fresh California figs. Here are two commodities which never were moved long distances by rail or truck," explained McCormack, "and we could list many others. As to the more standard articles, air carriers cannot yet successfully compete with other forms of transport. As I see it, shipments of articles of comparatively low value will continue to be shipped by rail or truck, except in emergencies. Put it this way: On orders where there's no urgent rush, use rail, truck, or water carriers; where speed is of paramount importance use air carriers."

"All is not rosy on the air front," said Brown, "and your easy endorsement of air transportation doesn't sit right with me. Here are some reasons. Bergdorf Goodman, the well-known wearing apparel house in New York, has a rough time trying to meet competition. Why? Because, despite the fast air trip from Paris (to give one transatlantic example), goods are held two, three and even four days at appraisers before being given clearance. Since other houses are bringing in goods at the same time, and since the clearance occurs every several days, B-G has no chance to get its imports in a day or two ahead of someone else. The reason for this situation is shortage of help at Customs. You don't have that at ports; you do have it at airports. What's the sense of air shipments which cut three days or so off the water time when you lose it at Customs?

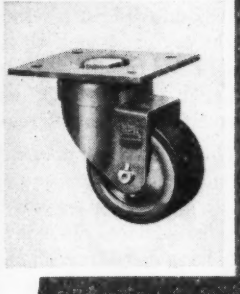
"This is not to imply that air imports are suffering. Despite the frequent delays, particularly in high-value merchandise of certain sorts, imports by air are going up all the time. Seaboard and Western Airlines, I understand, reports a big increase in westward freight movement from abroad. Evidently, the advantages of air shipment, generally, still exist. But I thought I'd mention one bottleneck. Oh, yes, and another case of air trouble: the devaluation of the Mexican peso has sliced 20 percent off air-cargo originating in Mexico."

"Well," said McCormack, "no one is saying all is rosy in any sector of transportation. To counter what you said about air difficulties, here are opposite examples. A large perfume house located in the East is relying more and more on air shipments. The time factor is the one that has become more important, and perfume is coming over in heavy loads. This item being highly seasonal, either the cargo is zero pounds or hundreds of pounds. Incidentally, this company links its own plane operations (for further domestic shipment) with leased trucks and its own trucks. They've really gone to town in integrating just about every size and shape of transportation to get their product where it's needed at the right time.

"Then there's a big tobacco company, one of America's largest. Its interest is in export, and cigarettes go to Caribbean Islands and Northern South America. It uses air in preference to water shipment, because of the congestion in ports, as well as the fact that the time required to ship by air is small. Cost, in the case of export cigarettes, is no object.

"On the other hand, a major mail-order house has largely discontinued air shipments to Europe. Not because of any failure of air

(*Continued on page* 65)



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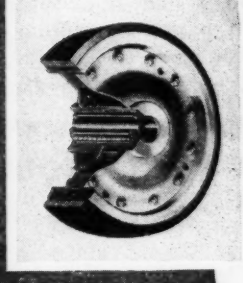

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WHAT'S ALL THE SHOUTIN' FOR?

(*Continued from page* 48)

fense" considerations. Not only is there no danger of an invasion of the Lakes area but a few thousand tons more or less will scarcely matter, in view of the great size of the U. S. ocean fleet of merchant ships.

When the Commissioner asks for the return of the package fleet, he is also on unsound ground. These ships averaged less than 4,000 tons. In view of the long-term trend to larger ships, it is probable that ships of somewhat larger size but of limited draft would be needed. On the other hand, whatever introductions of package freighters have occurred have been of smaller vessels. Not only that, but those few ships are used to cut across elongated Lake Michigan, reducing a truck or rail route of about 300 miles to barely 75. Clearly, the much-touted rebirth of package freighters is actually due more to a localized geographical factor and far less to questions of competitive rates. A real package service on the Great Lakes has yet to appear.

Mr. Brockel asked General Fleming for a staff study of the situation. Apparently unwilling to await the results of such a study, he makes two proposals: adjust rates to prevent the railroads from cutting rates below profitable margins for water carriers (a polite way of asking for regimentation of rail rates beyond anything experienced so far in this country, and akin to a subsidy) and rejuvenate the domestic merchant marine at any cost (another subsidy). Naturally, he appeals to "the national interest" and to "national welfare and economy." As to the last, it is questionable how much economy there is in his proposals, involving as they do permanent subsidies of no mean order.

Lastly, shippers will wonder at Mr. Brockel's statements since he lumps ships which are industrial carriers (belonging to specific companies such as U. S. Steel) with carriers involved in general transportation. Shippers are less worried about ore carriers and far more about how to get goods to destination as fast and as cheaply as possible, without much concern over whether the goods go by rail or truck or what have you.

As to the port cities on the Great Lakes, it is questionable whether they have suffered severely from the discontinuance of package freight.

WHAT ABOUT PALLET POOLS?

(*Continued from page* 48)

conventional purchase requisition. The day-to-day relationships between the user and the pool would probably be by telephone, with confirmation on paper following oral agreements. The transactions then would involve buying or selling for both parties, depending upon the user's current inventory.

It seems logical to suggest that each transaction should be a definite purchase or sale rather than any form of lease or rental agreement. Thus, there is no need for any identifications of ownership, and any acceptable pallet in the user's possession could be sold to the pool. There is precedent in industry for this suggestion. Deposits made on drums, air cylinders or even "coke" bottles is really a purchase in effect. It is called a deposit because the seller wants the container returned, and the user has but one source for refund of his money. But, if the janitor wants to use a drum for rubbish collection on which a deposit has been made, it is bought by not returning it for refund. Buying pallets, then, really constitutes a deposit, but any pool operator would refund the deposit, so to speak.

If such a series of transactions is to be consummated by telephone there is a need for a clearly understood, specific terminology. When a buyer orders a drum of No. 20 asphalt-base lubricating oil he and the seller understand each other. By the same token, if he orders 40 x 32 in. Grade B pallets, there must be a clear understanding of the product which will be delivered. It is then suggested that quality and service condition of pallets might be arranged in grade groups. The accompanying suggested price list might convey the thought intended. The number of grades required and the specifications for each grade would be a problem requiring research and might be a worthy topic for a simplification committee sponsored by the Bureau of Standards. The necessity of minimizing the number of sizes and grades seems obvious. The Bureau of Standards has already presented suggestions concerning pallet sizes.

What about the user's attitude toward pallets and the similarity between potential buying motives and procurement practices with this product and others which he requires in his production routine? The pallet is an accessory in his operation comparable in usefulness, inventory recording, cost-accounting practices and purchasing routines to such items as perishable tools and pipe fittings. In our merchandising organization the mill supply house caters to such needs, so it is questioned whether the user might logically look to mill supply houses for the services involved in a pallet exchange as well as his source for permanent requirements.

The mill supply house then might be the medium for equalizing surpluses and scarcities within the local area he services. In addition, there will be a need for shifting inventories between areas, depending upon supply and demand. Again, there is a precedent that might be followed.

Our grain exchanges provide a focal point where buyer and seller can meet. Any local miller can hedge his commitments by notifying the exchange that he wishes to buy or sell. The exchange matches his request with others having the opposite desire and then collects a commission for the service. Does it seem feasible that a comparable exchange might function with pallets to equalize surpluses and scarcities between local areas on a regional or national basis?

FLIGHT EQUIPMENT

(*Continued from page* 45)

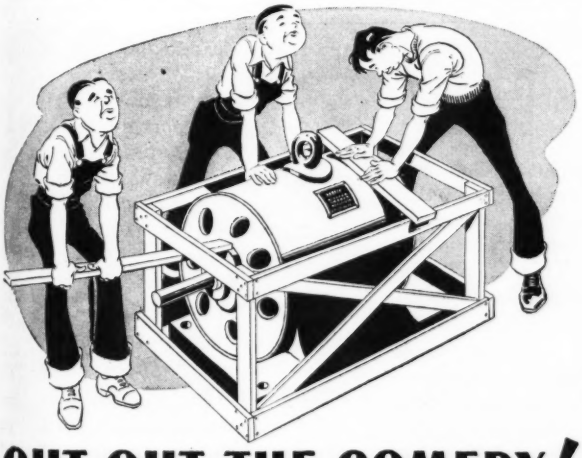
not tended to keep U. S. builders out of the commercial running. Be that as it may, Lockheed and Douglas, among other private builders, might tell the military that a slight shift in emphasis would probably be of help all around. As pointed out elsewhere in this issue, the builders are delighted with cost-plus contracts, and do a swell job on army requirements. As a result, the commercial lines have been accustomed to playing a very soft second fiddle.

Among the many bits of evidence that plane design for commercial use is forging ahead in the U. S. is the work being done by Airborne Instruments Laboratories, Mineola, in constructing plane models which ultimately will be resolved in ultra-modern commercial plane structures. This work, one of the many facets of activity by the AIL, is intimately tied up with communications. External antennae, customary with present commercial planes, would be inadvisable when jet planes with supersonic speeds are employed.

This indicates the highly integrated nature of modern plane development. Significant changes in air speed or landing speed, to give two examples, mean literally hundreds of modifications in plane structures, and involve the experimental work of numerous laboratories, military engineers and plane builders, radar sources and training centers where men are taught to utilize the new planes and incorporated devices. Modern commercial planes cost millions—with good reason.

A valid conclusion is that American developments undoubtedly are on a par with those of the British, but they are hush-hush or solely military property. For reasons aforementioned, the British are willing to put some of their wares on the shelf instead of under it. One example of this is Blackburn General Aircraft's Universal Freighter, a prototype of which is now "on the stocks." Specifications include: 95,000-lb. gross weight; can operate "from small fields"; has 5,760 cu. ft. of cargo space and can carry a payload of 21,730 lbs. over short ranges; built-in hydraulically operated ramp permits easy loading.

While this plane can carry only half that of the Douglas C-124A, most commercial demand is for short-range planes with modern handling equipment and not for air giants that often prove to be a headache, whether on paper or on a field. Leading commercial airlines here are using many two-motored craft with limited load capacity. Coupled with this is the fact, as shown verbally and in writing by Britishers, that they have a less-than-favorable opinion of some of our planes. It may be insularity, or pride, but perhaps it is that the British hew to the "business as usual" line. And this generally pays off in peacetime.



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DECENTRALIZATION

(*Continued from page* 52)

The rapid expansion of Cleveland's air terminals has been given encouragement through the establishment of direct supervisory commissions, which, while co-ordinating with all freight forwarders, are responsible for the direct and immediate expediting of air cargoes.

Chicago

The name of Chicago has long been associated with widening transportation. While its incorporation back in 1833 was decided by just 13 votes—with one lone dissenter—its first jump into importance was the result of eastern capital investing in the Chicago River-Lake Michigan Canal in 1841. The city's population had reached over 80,000 citizens, and within the next seven years population gains were fourfold. In 1848 the Illinois and Michigan Canal was opened; this changed the flow of goods from southward through the Mississippi River to eastern cities and thence to Europe. The new canal made it possible to reverse this flow and find a quicker route through the Great Lakes and their connecting canals. It was eastern capital, competitively hurling railroads across the young nation, which created Chicago's present position.

With the advent of rails, Chicago rapidly became an industrial and commercial center of importance; it was started on its way to financial independence. Through the railroads, cattle were easily secured for the expanding population, and in 1875, Philip D. Armour moved into Chicago from Milwaukee, followed in the same year by Gustavus F. Swift, the Yankee. Refrigeration soon made it possible for Chicagoans to provide fresh meat to the rich East. Coal mining became important in the '50's when the railroads began using coal, and the Bessemer steel plant furnaces were developed. Heavy industry and great volumes of commerce rapidly spread Chicago into an unorganized metropolis, crowded, dirty, wicked, beautiful and ugly.

Chicago's problems, so far as materials handling is concerned, differ little from those at practically every other American city which rose without dreams of their future size or importance. The Chicago River and the swampy terrain have never been completely evaded. Because rural land values have risen with almost equal pace to the city property appreciations, it has been primarily the demands for more physical space that have led industries to settle outside of the Chicago area. Nowhere else, with the possible exception of Los Angeles, has the sameness been encountered in labor, land and direct shipping costs. It has been possible to obtain necessary land, however equal to the cost of city property, where competitive factors and zoning regulations would preclude such expansion in the city. Flexibility of trucking, rail and barge facilities have aided in the expansion of Chicago's outlying districts. It has, in many cases, been more costly to relocate but the advantages for future growth have been assured.

FLOOR-LOAD

(*Continued from page* 53)

is likely, therefore, to be greater, and accordingly, (3) the floor should have a higher factor of safety. In addition, it is often found that the column spacing in front of an elevator is less than that for other parts of the building. The length of aisle in that particular bay is shorter and has a lesser total carrying capacity if the floor at that point is thinned down to give the same static capacity per square foot as in other sections of the plant where the column spacing is normal. This condition, however, is somewhat offset by the fact that goods are seldom stored in such a bay. Where the entire bay can be devoted to supporting the weight of the loaded truck or trucks, the entire bay area may be used in the computations.

The foregoing obtains more particularly for the concrete slab type of floor construction, which, according to most architects, is one of the more desirable types of floor for buildings used as described above. Where other constructions are employed, further studies must be made, which in some cases will involve the actual wheel loading. This is particularly true on wooden floors where only a few boards or planks may receive the entire load of a pair of wheels. Such a floor may be rated for a fairly heavy carrying capacity per square foot with a uniformly distributed load, but may not be capable of the concentrated loads produced by truck wheels, and in such cases, further computations (and possibly tests) may be indicated. An engineer-architect, in most such cases, could devise a reinforcing means (such as steel plates) to distribute the concentrated wheel loads over a greater number of planks.

Where steel beams are part of the concrete floor construction it is possible that concentrated loading may produce a problem because the span of the beams may be less than the span of the bay or the columns. This reduces the area devoted to supporting the truck, and a detailed study should be made to allow for such a condition. Where such construction is used, the thickness of the concrete would be less, and because of this lesser thickness the stresses in the concrete due to concentrated loading may be increased even though the space between these beams is relatively small.

To summarize, simple study can give an approximate indication of the weight of the loaded trucks which may be safely operated on a floor. When these computations indicate that the weight of the trucks proposed approach the maximum figures, a detailed study by a competent engineer should be made. If the weight of the loaded machines is comfortably below the maximum figures, and the building is in a good state of repair, it would be safe to apply a trucking system without such a detailed engineering study.

PACKING

(*Continued from page* 23)

pared with those for other forms of transportation. But unless these comparisons are based on the results obtained by actual experiments with specific shipments, the information is likely to be inconclusive or misleading. It is impossible to say with any accuracy that freight of a certain character, packed for shipment by rail or motor carrier, will, under all conditions, weigh a given amount more per unit, or that the packing for ground-carrier movement costs a definite amount per 100 lbs. more or less than the packing of the same product for air transportation.

In some cases, goods can be shipped by air without any packing at all if suitable pick-up and delivery trucking arrangements are made at the journey's start and end. In such instances, it follows that there are large savings to be made from the absence of packing costs and from the low shipping weights, as compared with the cost of preparing the same goods for rail or motor shipment all the way. Such situations are, however, the exception rather than the rule, and generally apply only to full plane shipments.

Today there is very little aircargo moving in full plane loads. The majority of air shipments weigh less than 200 lbs. and seldom exceed 500. This means that aircargo traffic is loaded, and mingled in planes with other shipments, with baggage and often with mail. It is therefore subject to all the stresses and strains incident to loading, unloading and handling at transfer points. It is also subject to a certain amount of damage from the weather as no airport is yet adequately supplied with warehouse space in which aircargo can be held until pick-up by consignee or loaded at originating point, as the case may be.

Under present aircargo handling conditions, shipments should be packed just as securely as if they were going by rail or motor carrier. In fact, as aircargo traffic increases in volume, in distance hauled, and in the number of transfers between connecting carriers, the packing requirements will certainly get closer and closer to those which experience has taught us are desirable for shipment by ground carriers. But secure packing does not necessarily mean heavy packing because lightweight containers such as corrugated boxes have decided advantages.

Aircargo rates are relatively high, so it is to the shipper's advantage not to pay for any more weight in his containers than necessary. Much aircargo is still loaded and unloaded from planes and trucks by hand, and here the lightweight container has a decided advantage in overcoming the natural inclination of all cargo handlers to "let gravity do the work." Bearing lightness in mind, therefore, standards of aircargo packing are not very different from other packing standards, and the good packing practices which have been in force for years apply to air transportation no less than to ground.

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PESSIMISM DISAPPEARING

Business is realizing it must do a selling job.

WASHINGTON notes a significant change in the attitude of business. Such pessimism as has been in evidence in recent months is disappearing. A very decided change in this respect has been observed in the last four weeks.

A summing up of the encouraging tendencies in the business situation includes these developments:

The downward correction so far this year has been more moderate and orderly than in most prewar recession periods. Government, the banking system, businessmen and consumers have reacted cautiously, but without panic in this situation.

Interest rates continue low and credit is easily available. Liquidation of inventories has proceeded without undue pressure from banks. Reduction of excessive inventories is of itself a hopeful development for the future, although it has recently been contributing heavily to the contractive process.

Throughout the war and reconstruction periods it has been necessary to concentrate on the problems of production. As a result, industry and business have become production-minded. The urgent need now is to intensify selling. The proportion of national income now being used for advertising is one-half that of prewar. Thus, the most important single tool in merchandising is not being used to full advantage. A smart way to get rid of high-cost inventory, clever executives have demonstrated, is to buy more goods at lower prices, mingle the two and clear them out together. That's much better than holding back orders until high-cost goods are sold.

The downturn in prices came before many businesses were ready for it. They were caught with soft sales forces. Those who were prepared have done very well.

Competition Intensifying

It is apparent that the country is entering a period of intense competition. The hearings before the Judiciary Committee of the House of Representatives have demonstrated that there is widespread opposition to laws which tend to soften competition. The Miller-Tydings act, the Robinson-Patman act, the Webb-Pomerene act are all under fire. There is a demand for amendments to the Clayton act, the Sherman act and the Federal Trade Commission act.

Congress is expected to persist in its efforts until the whole subject of concentration of economic power has been analyzed. This will include concentration of power in the field of labor, as well as in the field of business. One of

FUTURE MOTAIRCARGO

(*Continued from page* 29)

minimum of 13¢, rates are still several times as high as l.c.l. rail rates. Moreover, aircargo rates have not been made with traffic-development problems sufficiently in mind. For example, there is an insufficient downward scaling for longer hauls and larger shipments as well as insufficient provision for differential rates among various commodities.

If aircargo is to be developed to a point approaching the potential talked of in the industry (up to a billion ton-miles annually), basic changes are necessary in the rate pattern. Lower rates, of course, depend on lowered operating costs, which in turn depend on the development of a plane specifically designed for commercial-cargo operations. In addition, the rate structure should be changed to conform more closely to the rate pattern of other carriers, not only with respect to length of haul and weight of shipment differentials, but also with respect to the varying values of commodities. Particularly favorable commodity rates are necessary, for example, to build up a back-haul traffic in fruits and vegetables from the Pacific Coast to correct the present directional unbalance. The CAB has permitted some back-haul rates, but much more must be done if volume traffic is to be developed.

6. *Possibilities for extension of market areas.* Shippers of perishable commodities have explored this factor. One of the airlines instrumental in developing wider markets for West Coast fresh fruits and vegetables has carried on experiments indicating that the marketing time span at distant markets is greatly increased for such products when transported by air. The same is true for fish and other sea foods, for baby chicks, cut flowers and other commodities now closely restricted to the localities of their supply.

7. *Possibilities of savings which counterbalance the additional cost of transportation by air.* During the past five years a number of such possibilities have become apparent, such as: reduction in packing expenses through the use of light-weight containers; reduction of inventory and warehouse costs through faster stock turn-over; reduction of capital frozen in transit; substitution of speed for refrigeration in transporting perishables; more effective management control of inventories and the like.

8. *Directional unbalance.* Two of the nine geographical regions of the country—the Middle Atlantic and East North Central—account for three-fifths of the originating aircargo. Almost two-thirds of the east-west cargo traffic is westbound and about the same proportion is south-bound in the north-south traffic. In part, this directional unbalance is due to the operation of cargo service as an adjunct to passenger service. More important is the fact that the northeastern part of the United States produces the greater part of commodities particularly susceptible to transportation by air.

the proposals which the committee will consider is the regulation of companies which produce a large proportion of the output in certain lines. That would require a definition of bigness which is difficult to formulate. The idea of one school is to regulate the large producers and, through financial and other aids, to encourage small business to provide a larger proportion of output.

The hearings have been suspended until October. It is apparent that the committee expects to pursue the inquiry actively. The subject is expected to become a matter of major interest this coming winter.

Prices Become Firmer

In the past month indications of firming have appeared in key industrial markets. Buying has been resumed in the nonferrous metals markets and prices of lead and copper have increased moderately following the very sharp declines of earlier this year. Production of non-durables has been fairly stable since April, and some recovery has occurred in textile markets. Automobile production is being maintained at a record-breaking rate.

For the current quarter, it is likely that economic activity will be sustained at the mid-year level and may show some rises above it.

The question may be raised as to whether the readjustments made to date — primarily in prices and inventories — have been enough to prevent further declines, or whether recent signs of firming are but a brief lull in a sustained recession which has not yet run its course.

On the whole, it appears that the process of readjustment is not yet complete and that employment, output, income and prices may continue to drift downward. The trend for the next nine months or so, however, well may be piecemeal, moderate and somewhat erratic. Corrective tendencies may be offset from time to time by special circumstances, such as changes in inventory policy and the payment of dividends under the national service life insurance program in the first half of next year.

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HOW TO DISTRIBUTE

(*Continued from page* 41)

eight years is due to a combination of circumstances including (but not limited to) increases in the size and range of airplanes, sharp increases in the cost of surface transportation and a changed perspective on the part of many shippers and receivers with respect to what constitutes a long or short time in transit. For example, United Air Lines, one of the 16 major airline carriers, claims that its volume of air freight in 1948 was double that of 1947 and that during 1948 it flew 21,000,000 ton miles of air freight. It should not be difficult to understand how the cost of air freight to the public has been reduced during the period in which the volume has been growing in such substantial measure. The possibility that air freight will soon become a mass transportation medium should not be overlooked, even though the bulk of this traffic is, of course, presently handled by surface and water carriers.

The largest volume of American mass transportation is transported in full unit loads and is usually designated as carload, truckload or shipload. This type of service is generally used for the following movements:

1. The transportation of raw materials from the source of supply to the point of use.
2. The transportation of manufactured products in large volume to a limited number of destinations where these products are consumed in large volume.
3. The transportation of manufactured products in large volume to warehouses or break bulk points for subsequent distribution and delivery.

This type of full unit-load transportation is generally an important part of distribution process for the reason that unit-load rates provide the lowest cost of transportation for the point of shipment to the point of breaking bulk or warehousing. The unit-load method has been further refined by the use of what is known as either the consolidated or pool unit. Both these types of unit will be referred to in further detail in connection with the discussion of various types of distribution methods.

(*To be continued*)

The term *distribution,* as previously defined, and when used in its broadest sense, contemplates the completed process from the time the finished product is ready for shipment until its delivery. In its more limited sense, and as generally understood in traffic, transportation and warehousing circles, the term usually contemplates final delivery from a breakbulk point—either from a warehouse or from a volume shipment originally made in a truckload, carload or possibly a shipload.

Warehousing has become one of the principal facilities of the distribution process. During recent years public warehousing has increased in both volume and importance, until today it is probably the most important and useful tool in the development of sound and efficient distribution procedures. In addition to being an interesting enterprise to the warehouse operator because of its flexibility and variety of problems, public warehousing is a transcendent example of the integration of all phases of distribution. Public warehousing includes—but is not limited to—the following types of service:

1. *Inventory storage at strategic points*—enables the manufacturer to effect prompt delivery in described areas, thus permitting him to compete with other producers located closer to that particular area.

2. *Inventory control*—allows a manufacturer at a distant point to maintain prompt and accurate records with respect to his inventory in the warehouse.

3. *Field warehousing*—of great importance in obtaining financing covering merchandise in warehouses.

4. *Branch house service*—enables a manufacturer to reduce his cost through the efficient and cooperative use of the space and facilities of a public warehouse.

5. *Storage in transit*—makes it possible for a manufacturer to divert or hold certain types of traffic under certain conditions until it is advantageous to continue the shipment to final destination.

6. *Bonded service*—expedites the transportation and delivery of "in-bond" traffic without requiring inordinate delays because of customs regulations or procedure.

7. *Refrigerated or heated space*—permits a shipper or consignee interested in the movement of traffic which is subject to damage by heat or cold, to hold this traffic in temporary or permanent storage under proper conditions.

8. *Packing, unpacking, crating, uncrating, and re-coopering*—relieves the shipper or consignee with limited packing or unpacking facilities of the inconvenience or expense of packing or unpacking. Re-coopering and related service is valuable to a shipper at a distant point in restoring a damaged shipment to good order before final delivery.

9. *Truck delivery service*—provides prompt and efficient delivery in local areas in accordance with the convenience and requirements of either the shipper or consignee.

10. *Re-forwarding service*—includes forwarding by express, parcel post, rail or other available means, and is very helpful in expediting the delivery of merchandise from a warehouse to points in a defined area for the account of a shipper located at a distant point.

An important medium in the distribution process is the consolidated or pool unit of transportation. The term *"consolidated"* is used

(*Continued on page* 66)

USDA Packaging Project

The U. S. Department of Agriculture has set up a Poultry Packaging Committee to: (1) produce poultry packages and packaging materials; (2) produce publications and educational material pertaining to poultry packages, packaging, handling, storing and similar practices; and (3) recommend research relative to poultry packages, packaging and related operations.

Representing NARW on this committee is J. L. Gagini, vice president, Omaha Cold Storage Co., Omaha, Neb. His alternate is H. A. Gross, general manager, Booth Cold Storage Co., St. Louis.

MAGIC CARPET

(*Continued from page* 57)

service, but because of exchange difficulties. Summing up our evidence, the problems in shipment here and abroad are due, not to air transportation, but to extraneous factors. These often affect other forms of transportation too."

"Under ordinary conditions," Brown remarked, "what would you say are the determining reasons for using airfreight, or perhaps air express?"

"In the first place," McCormack stated, "the value of a given commodity must be taken into consideration. Obviously, a cereal breakfast food could not profitably be regularly marketed on the basic rates necessarily charged by airfreight. Any product of that type is not of sufficient value per pound, but articles such as radios, women's dresses, samples of carpet or leaf tobacco, machine repair parts, and the like, all these and many more can be satisfactorily and economically moved by airfreight."

McCormack then referred to a survey made by the Civil Aeronautics Administration covering reasons given by various shippers for using airfreight services. Included in the list were the following: loss and damage lower than by other agencies of transport; useful for special and emergency shipments; for advertising purposes; to get goods to the scene ahead of competitors; packing costs reduced; service relatively economical for high-value goods.

McCormack added, "there are different factors to be included in comparing costs via air carriage with the costs of surface carriage. Cost of packaging is one item. Frequently, large savings in cost of packages and the packing can be achieved by using air transportation. Sometimes, inventory stocks can be maintained at a much lower level by shipping via airways. In fact, some warehouse stocks could be entirely eliminated and goods more quickly delivered to distributors and/or retailers."

"It would seem," said Brown, "that the air carrier has come to stay in the field of freight, as well as in the transportation of passengers."

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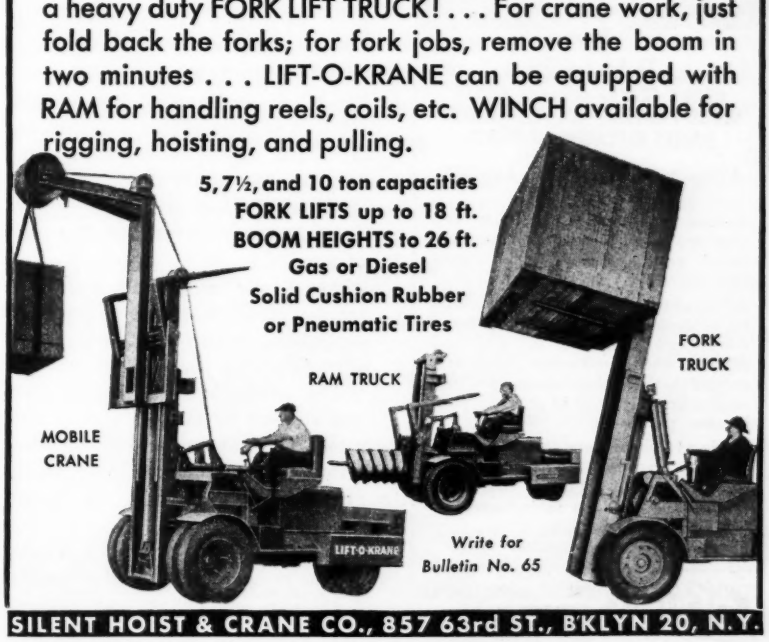

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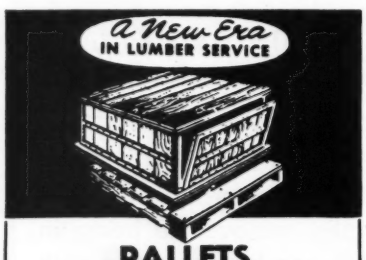

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OPERATION AIRFREIGHT

(*Continued from page 55*)

tion. Thus, cargo is quickly released for delivery and no time is lost.

Shippers are cautioned against use of sight drafts. Designed for surface transportation, sight drafts can tie up an airfreight shipment interminably. Shippers are urged to use simple C.O.D. specifications in making cash shipments. They are accepted as routine, with a small handling charge, and prompt remittance is made to the consignor. (There may be a delay where truck trans-shipment naturally delays the relay of funds. This is especially true if the surface shipment is a long one.) Open account, collect shipments are also routine with the air carrier. Full insurance of cargo is available at an additional cost. Each shipment, however, is automatically insured for $50 per 100 lbs. ($20 if perishable).

Following a flight departure, the accounting department receives airbill copies of all shipments. Charges are quickly run through office machines and statements are promptly mailed to cover freight bills. Recaps of outstanding freight bills are made for customers twice a month. Experience shows that this procedure expedites payment and gives the shipper or consignee a ready accounting of freight delivered every two-week period. If necessary, more frequent recaps can be made. Personalized service is the goal all along the line, even to the extent that schedules are being arranged so that planes reach terminals at times most suitable to completion of trans-shipments.

HOW TO DISTRIBUTE

(*Continued from page 64*)

to denote a full unit consigned to a single destination and containing shipments from various points assembled at the point where the unit originates. The term *pool* is used to denote a full unit shipped from one point of origin and containing deliveries for several destinations within a limited area adjacent to the billed destination of the unit. *Unit*, of course, refers to a carload, truckload or shipload, as the case may be, and could conceivably include a full load shipped by plane.

A further refinement of this type of service is called a *stop-off unit*, where a fully loaded unit is shipped from a point of origin to a named destination with one or more steps enroute for partial unloading.

The consolidated unit, pool unit and stop-off unit serve a very definite purpose in our present-day distribution process, and their use is growing substantially in many fields.

While differing in some details, the same principle applies in the operations of what has become known as a *club unit*, whereby several shippers in one locality will engage a full unit for their common use, with resulting savings to all the participants. The same principle can be applied to joint action by a group of consignees interested in receiving traffic from a single source.

This principle is also utilized by the so-called carloading or forwarding companies. In these operations the entire service is usually performed by the carloading or forwarding company, and even though they perform for the shipper or consignee service similar to l.c.l. rail service, the internal method employed is that of the carload or pool unit principle.

By way of illustration only, and without intending to suggest that the examples are applicable to all cases or that they represent the only methods and principles which may be used, it might be helpful to outline a few representative distribution procedures.

1. The C Company ships full cars of canned foods from its plant

(*Continued on page 69*)

NEXT MONTH

DISTRIBUTION AGE for November will present: a study of big port cities and how they are affected by current decentralization tendencies. Some cities, such as New York, are also hampered by congestion, shortage of investment and improvement funds, and particularly by competition with other Atlantic Coast and even Caribbean ports. Until recently, there was the feeling that the commercial lead of New York was so great that the city had little to fear. But the recent drop in foreign trade, coupled with aggressive sales campaigns of other cities, has in part been responsible both for cutting down that lead and eliminating complacency. It is not anticipated that New York, Chicago and other metropolitan centers will quickly become ghost towns. But the economic and political factors at work will inevitably and within our generation markedly change the urban-suburban-rural balance. Everett Starr's analysis of major factors deserves weighty consideration.

●

Distribution Age is privileged to welcome two guests of high industrial and educational standing to its columns: E. A. Siedle, general traffic manager, Armstrong Cork Co., and H. H. Pratt, general traffic manager, Crucible Steel Corp. of America. The former will discuss freight classification, the latter some intriguing aspects of Shippers' Advisory Boards. Mr. Pratt, parenthetically, has been doing some novel things in the Atlantic States Shippers Advisory Board, and his innovations have set certain people to thinking. Much can be done to invigorate these organizations, particularly in this period of transportation consciousness. And the potentialities of traffic managers in such work cannot be over-estimated.

●

"Why Do They Call Us Robbers?" asks D. Oliphant Haynes, vice president, Merchants Refrigerating Co., New York. With good reason does he inquire, for many shippers have too limited a conception of the factors going into warehouse handling charges. By the same token, the warehousemen ought to standardize the bases for rates and thus aid in obtaining sorely needed improved customer relationships.

Mr. Haynes makes a careful analysis of expense allocation, and touches upon the more significant differences between public and private warehouse operations and hence cost determinations and allocations. Elsewhere he warns about the importance of maintaining tariffs and improving services.

BOOKS AND CATALOGUES

THE WATCHMAN'S HANDBOOK, put out by American District Telegraph Co., New York. This 64-page pocket-size booklet tells watchmen and superintendents how to help protect property from fire, burglary and other dangers. It teaches familiarity with equipment on premises, warns against carelessness, how to act in a fire or other emergency and in other ways may prove helpful as a guide. It includes a discussion of ADT equipment, including reporting systems, protection devices, alarms and sprinkler devices.

CONVEYORS AND STACKERS. Catalog No. 102 gives description and specifications of various types of gas or electric driven portable conveyors—belt, apron, sectional, etc., to help solve materials handling problems. These machines are built under license from Jeffrey Mfg. Co. of Columbus, Ohio, according to their designs and specifications. Copy of catalog may be obtained from J. C. Corrigan Co., Boston 22, Mass.

MOVE MORE FOR LESS is a 32-page belt conveyor bulletin released by Lippman Engineering Works, Milwaukee. Considerable information is presented on stationary, portable and special-purpose belt conveyors, using both troughed and flat belt. The bulletin discusses applications and methods of selection of belt conveyors, including dimensions, weights and specifications for standard head, tail and intermediate sections, frames and terminal machinery. For specifications, write for Bulletin 1410.

ATLANTIC METAL HOSE CO., INC., New York, has just released a new brochure, catalogue 100, on "Flexible Metal Hose." The brochure covers recent developments in interlocking and seemless hose as a flexible medium for such applications as diesel exhausts and conveying liquids, gases, solids and semi-solids. Test tables, installation methods and applications are included.

INTERNATIONAL SHIPPING GUIDE, compiled and published by American Airlines, Inc., contains a listing of Transatlantic, Transpacific and Latin American rates and routings. It also gives general tariff information (weight, valuation, insurance, c.o.d. and collect shipments and commodity rates), international shipping document requirements and an illustration showing how to complete the new Shippers' Export Declaration. Copies may be obtained at any American Airlines office.

HOW TO DO BUSINESS WITH THE QUARTERMASTER CORPS. A 16-page booklet telling you that the Corps buys almost everything from books and periodicals to musical instruments, embalming equipment and warehouse materials handling equipment. It is designed as a guide to shippers and dealers and tells how the Corps buys: discusses invitations for bids, negotiation, proper computation of costs, drafting of bid, and such matters as responsible bidder and what a responsive bid is. After reading the booklet, you won't be much wiser than you were before, but at least you'll know what your next steps are.

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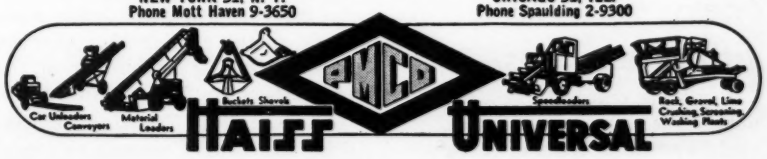


EXCISE TAX—A SYMPOSIUM

(*Continued from page* 44)

lected. It handicaps for-hire carriers in competing with private carriers.

The tax on transportation of property has a discriminatory and compounding effect. In particular cases it is applied on as many as half a dozen transportation movements incident to the manufacture and distribution of given articles. It is imposed upon the movement of raw materials into the manufacturing plants. It is levied again on the movement of finished products to warehouse distribution points. It is assessed on movements in warehouse distribution when performed by for-hire carriers of any description. It is imposed still again when delivered by the retailer to the final consumer if for-hire transportation is used. It is in the nature of things that the tax lies most heavily on the smaller shipper who is unable to effect the transportation economies available to his larger competitors.

The tax on transportation of persons was imposed in part to discourage passenger travel during the war. The compound tax of five, five, and five percent represents a levy of serious proportions which unquestionably discourages the use of travel by rail, air and bus in favor of the private automobile. The tax is thus a definite factor in the decline in passenger traffic of for-hire carriers. To this extent it is unreasonable and unjust. Carrier reports show that a large part of their equipment is being operated with only partial occupancy.

Under present economic conditions characterized by declining production, lessened industrial expansion and falling commodity prices, continuance of the transportation tax is untenable.—*A. H. Schwietert, traffic director, The Chicago Assn. of Commerce and Industry.*

MOTOR CARRIERS:

For some years, the trucking industry has been opposed to the Federal Government's tax of three percent on transportation and has joined with shipper organizations and other transportation agencies in seeking its repeal by Congress.

Our objection to the tax, which actually is directed to the country's shippers, stems from the difficulties we encounter in collecting it and passing it along to the Federal Treasury. Certain governmental agencies also have recommended its repeal on grounds it has proved difficult to collect, and they took this position even during the war years, when every possible source of tax revenue was being tapped.

Collection of the tax is a costly and complicated administrative burden to every transportation agency. Exemptions and interpretations of the application of the tax cause added inconvenience and uncertainty.

These problems are particularly acute in the trucking industry because it is made up of many small businesses. Of the 23,000 motor carriers of property subject to the Interstate Commerce Commission, only 2,600 are Class I carriers with annual gross revenues of more than $100,000. All of the remaining thousands are much smaller. A total of 11,300, or 49 percent, of the carriers subject to ICC jurisdiction operate four trucks or less, and there are additional thousands upon thousands of small operators with just one or two trucks who are not subject to Commission regulation because their service is entirely local or intrastate.

The size of the tax-collection job for such carriers can be illustrated by pointing out that the average Class I carrier issues about 116,000 freight bills a year, or, in other words, must calculate taxes and collect them on 2,200 freight bills every week. In the case of many freight bills, the task of collecting the transportation tax is far more costly to the carrier than the tax revenue that is derived from the transaction by the government.

The American Trucking Associations has asked Congress to repeal the tax. We feel that such action would both remove from the truck operators' shoulders the onerous burden involved in computing and collecting the tax and the attendant risk that always confronts the citizen in handling government tax collections in this fashion.—*H. D. Horton, president, American Trucking Assns., Inc.*

RAILROADS:

The National Assn. of Railroad and Utilities Commissioners, at its 61st annual meeting in Cleveland Aug. 8-11, passed a resolution calling for the repeal of the excise tax on transportation of passengers and freight. Originally, the resolution was worded to the effect that the tax "should be repealed or greatly reduced." However, that phrase was dropped by unanimous approval. The final resolution demanded the repeal of excise taxes on the basis that such taxes "are inimical to the maintenance of reasonably priced and nondiscriminatory public transportation and communication service."

Walter R. McDonald, speaking on mounting railroad deficits, directed a vigorous attack on excise taxes. President Justus F. Craemer also called for the abolition of the tax and stated: "It is high time that authorities in Washington wake up (to the fact that the tax has added a heavy burden to rail transportation). It is time to abolish a tax that lends itself to this character of discriminatory treatment."

FOR STATUS QUO

So far we have found only one person who has expressed approval of the status quo: the President of the United States, Mr. Harry S. Truman. The President was recently questioned by a correspondent on whether it might not be a good thing to repeal the tax. The reply was to this effect: Where else are you going to get the money from? Apparently, the desire for a relatively small amount of revenue for spending purposes of all sorts has thus far outweighed the cogent arguments and pleas of leaders in industry and in public life.

HOW TO DISTRIBUTE

(*Continued from page* 66)

in Camden, N. J., to the B Warehouse Company at X. The car is consigned to the C Company, c/o B Warehouse Company and contains from three to seven separate shipments for delivery to C's customers in X, f.o.b. car at X. When the car is shipped, C Company mails a loading manifest and diagram to B Company, which also contains a statement of the expected date of arrival of the car at X. B Company is notified by the railroad of the arrival of the car in the railroad switching limits of X and arranges with C's customers to have them call for their shipments at B's warehouse in accordance with the loading diagram. B Company checks out the contents of the car to each of C's customers in accordance with the loading manifest and obtains a duplicate signature for each separate shipment on delivery receipts which it has prepared itself. In the event of shortage or damage, appropriate notations are made on the railroad receipt, and B Company acts for C Company in preparing the proper railroad inspection report. B Company then submits its bill for services, accompanied by the separate receipts and by a car-arrival report and a railroad inspection report where necessary.

2. The D Company, a large automobile manufacturer, ships full cars of automobile parts, accessories and motors from its plant at Detroit to the E Warehouse Company at Z. These cars contain several shipments destined to points within 25 miles of X, which is intermediate to Z, and are routed via the siding of the F Warehouse Company at X for partial unloading. When a car is shipped, D Company mails loading manifests to E Warehouse Company and F Warehouse Company, as follows:

a. The manifest to E Company sets forth the deliveries to be made to D's dealers in the vicinity of Z by motor vehicles operated by the E Company.

b. The manifest to F Company sets forth deliveries to be made to D's dealers in the vicinity of X by motor vehicles operated by F Company.

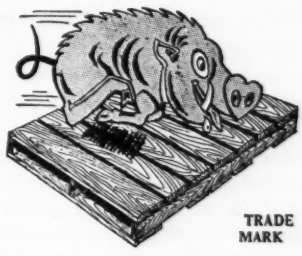
When the car arrives at F Company's siding, it is partially unloaded in accordance with the loading manifest, and the portion unloaded is transferred to motor vehicles, which are operated by F Company, for delivery to D's dealers. F Company then braces and blocks the remaining contents of the car and the car goes forward to the E Company, at Z. E Company unloads the remaining contents of the car and completes delivery, by its motor vehicles, to D's dealers in the vicinity of Z, in accordance with the loading manifest prepared by D Company. F Company and E Company obtain a duplicate signature for each separate shipment on delivery receipts prepared by each company. In the event of shortage or damage, appropriate notations are made on the railroad receipt by each warehouse company, and each firm acts for D Company in preparing the proper railroad inspection report. F Company and E Company then submit their respective bills for services and transportation, accompanied by the separate receipts and by car-arrival reports and railroad inspection reports where necessary.

(*To be continued*)

Railroad Safety Award

The E. H. Harriman Memorial Gold Medals for safety records in 1948 were awarded to nine railroads in New York, Sept. 14. Among those receiving the awards were the Lackawanna, Texas and New Orleans and Southern Railway Co. The award is based on a somewhat complex formula, using ICC data.

Four elements are considered: 1) passenger casualties in train accidents per 100 million passenger miles; 2) passenger casualties in train service, an average of one per 100 passenger mile per million passengers; 3) employe casualties per million man-hours work; and 4) all other casualties (with qualifications) per 50,000 locomotive miles. All four factors are totalled; fatalities count five points; injuries one point. The award was presented by Robert V. Fletcher of the AAR; Mr. Fletcher is chairman of the Award Committee, American Museum of Safety, New York.



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FROZEN FOODS IN COLD STORAGE

(*Continued from page* 42)

what easier to handle smaller, better-constructed containers filled with a non-breakable product, it requires slightly more time to handle six million cans than five million cases.

The percentage figures showing loss in revenue to the industry are even more important than the dollars and cents, because they would be apt to hold, regardless of the rates charged in different parts of the country. Stated differently, rates for two commodities in different sections are less subject to variation percentagewise than absolutely.

Handling-revenue, from the industry standpoint, is not satisfactory. The basic data in Table 1 show that the charges for frozen eggs are lower per 100 lbs. than for shell-eggs. And since, as explained above, it requires seven percent more time to handle canned eggs than cased eggs, the drop in handling-revenue represents a net loss.

Revenue from storage is an improvement, since the return per square foot is higher for frozen eggs than for shell-eggs. It must be remembered, however, that it costs more to service a freezer than a cooler, and the investment in the former is considerably higher than in the latter. All in all, however, the storage-revenue figure would be perfectly satisfactory if the storage industry could fill the freed space in coolers with other commodities. But since public coolers in the U. S. are about 50 percent full, there would appear to be (considering these figures alone) a net loss in storage revenue to the industry.

Summing up, it would appear that the shift from shell-eggs to frozen eggs has resulted in a 44-percent drop in handling revenue, with a seven-percent increase in handling costs; together with a 21-percent reduction in storage revenue, which is not counterbalanced by the addition of new commodities in the coolers to fill the space formerly occupied by cases of eggs.

If the assumptions made earlier are correct, it would appear that the warehousemen have not gained from the change in egg-marketing. But the assumptions are probably not entirely correct. Under present conditions in shell-egg distribution, it is more than probable that some eggs which reached cold-storage plants as frozen eggs would have by-passed storage en route to the consumer, had they not been processed. This represents an unknown quantity. The industry may draw consolation from the fact that some lost revenue has been recaptured by the increased use of frozen eggs.

The study on eggs typifies what happened with a product which has undergone a long-term shift from cooler to freezer. Now let us consider a new, sensationally successful commodity: quick-frozen orange-juice concentrate. First introduced commercially about two years ago, this product has become so popular that it may well outsell all other quick-frozen products combined. Authorities estimate that in 1949 some 15 percent of Florida's orange crop—normally amounting to 64 million 90-lb. crates—will be processed; next year's figure will probably reach 25 percent. Here is a product which, because of volume, and because it must be stored at a very low temperature, cannot but have far-reaching effects on the warehousing industry.

As a basis for estimating these effects, let us assume for the moment that the 9.6 million boxes of oranges (15 percent of the crop) would have been stored as fresh fruit. Table 3 presents the basic

TABLE 4. THE RESULT OF STORING FRESH ORANGES AS ORANGE JUICE CONCENTRATE

(BASED ON 15% OF FLORIDA'S 1949 CROP)

	As Fresh Oranges	As Frozen Concentrate	Percent Difference
AVERAGE HOLDINGS			
Pounds—gross	152,000,000	29,696,968	—80%
Net	144,000,000	25,454,544	—82%
No. of containers	1,600,000	1,060,606	—34%
No. of carloads	3,047	353	—88%
AVERAGE LENGTH OF HOLD	2 mo.	4 mo.	
ANNUAL RECEIPTS			
Pounds—gross	912,000,000	89,090,904	—90%
Net	864,000,000	76,363,632	—92%
No. of containers	9,600,000	3,181,818	—67%
No. of carloads	18,281	1,060	—95%
ANNUAL REVENUE			
Handling	$1,728,000	$198,545	—88%
Storage	2,880,000	702,545	—75%
Total	$4,608,000	$901,090	—82%
AVERAGE STORAGE SPACE			
Square feet	1,081,898	169,950	—84%
ANNUAL STORAGE REVENUE PER SQUARE FOOT			
Dollars per sq ft	$2.66	$4.13	+55%

data from which Table 4 is calculated.

TABLE 3. REFERENCE DATA ON FRESH ORANGES AND CONCENTRATE

	FRESH ORANGES	CONCENTRATE
CONTAINER		
Kind	Crate	Carton (48 six-oz. cans)
Oranges	175	528
Gross lbs.	95	28
Net lbs.	90	24
Cu. ft.	2.8	0.57
CARLOADS		
Oranges	91,875	1,584,000
Containers	525	3,000
Gross lbs.	49,875	84,000
Net lbs.	47,250	72,000
WAREHOUSE TARIFF RATES (New York City, 1949)		
Handling (per container)	18.0c.	6.24c.
Handling (per cwt. net)	20.0c.	26.0c.
Mo. storage (per container)	15.0c.	5.52c.
Mo. storage (per cwt. net)	16.7c.	23.0c.

It is assumed that fresh fruit is stored for two months, the concentrate for four months. Table 4 shows that slightly more than 17 carloads of fresh fruit are required to make up one carload of the concentrate, indicating the concentration of this new product.

The last column of Table 4 demonstrates the reduction in volume stored and in space required when fruit is processed. Revenue from both handling and storage show alarming declines (see lines "annual revenue"). And this despite the fact that annual revenue per square foot has gone up 55 percent.

However, revenue from handling fares better than in the case of eggs. The number of pounds handled dropped about 90 percent, but handling revenue is off only 88 percent. But these figures fail to tell the whole story. The results shown are based on concentrate packaged in cartons holding 48 six-fluid-ounce cans with a gross weight of 28 lbs. Actually, there are larger institutional packs which are more economical for warehousemen to handle. It is hoped to increase the number of cans in the consumer size (holding over 50 lbs., a weight conducive to better handling).

Loss in handling-revenue is somewhat balanced off by savings in labor, due to greatly reduced volume handled. These savings are sorely needed, however, to help out on the storage-revenue picture, because the return per square foot has not increased percentagewise as much as in the shell-egg and frozen egg situation.

Lastly, the reduction in storage space occupied would be beneficial if that released space in coolers could be utilized; actually, there has been a serious loss in revenue. Summing up, while the above analysis covers only the Florida output, and since the trend is upward, the switch to concentrate appears to be of little benefit.

Is it correct to assume that all the oranges represented by concentrate would have gone into storage? It may well be that the concentrate actually represents new business.

Taking the frozen-food picture as a whole, Table 5 shows increased storage holdings of frozen fruits and vegetables from 1939 to 1948. Parenthetically, the reason for the headstart of frozen fruits over vegetables is that large quantities of so-called cold-packed fruits and frozen whole fruits were not quick-frozen but were put in ordinary freezer rooms for several days; the data cover all types of frozen products.

As in the case of other products received by the storage industry, the increase in pounds handled is not a blessing; for every dollar of handling revenue, the average warehouseman must pay out two dollars in labor and overhead. In the present instance, the $13 million apparent gain is offset by the loss of handling revenue, plus an additional equal amount, or a total of $2.5 million. Yet, it must be granted that there is a very real gain to the industry from the introduction of quick-frozen foods.

The frozen-food industry is young, and expanding rapidly. Increased numbers of products, such as seafoods, are being placed in storage every year. Before long, perhaps, these newcomers and the more staple type of storage which frozen foods offer, will more than compensate for the losses suffered by the coolers.

Table 5. THE RESULT OF STORING FROZEN FRUITS AND VEGETABLES YEARS 1939 AND 1948

	1939	1948	Percent Difference
AVERAGE HOLDINGS			
Fruits—lbs	116,000,000	317,000,000	+173%
Vegetables—lbs	63,500,000	240,000,000	+277%
Total—lbs	179,500,000	557,000,000	+210%
ANNUAL RECEIPTS			
Fruits—lbs	348,000,000	951,000,000	+173%
Vegetables—lbs	190,000,000	720,000,000	+277%
Total—lbs	538,500,000	1,671,000,000	+210%
ANNUAL REVENUE			
Handling			
Fruits	$765,600	$2,092,200	+173%
Vegetables	419,100	1,584,000	+277%
Total	$1,184,700	$3,676,200	+210%
Storage			
Fruits	$3,201,600	$8,749,200	+173%
Vegetables	1,752,600	6,624,000	+277%
Total	$4,954,200	$15,373,200	+210%
Handling and Storage Combined			
Fruits	$3,967,200	$10,841,400	+173%
Vegetables	2,171,700	8,208,000	+277%
Combined Total	$6,138,900	$19,049,400	+210%

DISTRIBUTION ACTIVITIES

Classified and alphabetized by organization for the convenience of the reader

Air

American Airlines is appealing to the courts the CAB decision to certificate air freight carriers, reported earlier in this publication. American took notice of the three to two decision of the Board and warned of the consequences, particularly to combination passenger-freight lines.

Bilkays Express Co., Newark, N. J., has been appointed exclusive New Jersey pick-up and delivery agent for Air Cargo, Inc.

Senator Brewster, Republican, of Maine, has introduced S.2301, a bill providing for development at government expense of commercial cargo and transport aircraft adaptable to military transport service. This is old hat to Congress; since as far back as the pre-war years every session of the legislature has managed to come up with its own version of the "Prototype" Bill. Of course, there are no complaints from the aircraft manufacturers. Uncle Sam foots the bill for research and shells out the price of the prototype plane. All the manufacturer has to do is come and take a look and then go home and make his own model. But from then on, the bills are his headache, not the government's.

The CAA has approved Curtiss-Wright's three-bladed monocoque hollow steel propeller. The first of the propellers has gone to Lockheed for installation on new airliners. Automatic synchronization and reversible pitch are among the features of these 15-ft. propellers.

The CAA has set up an "airports advisory committee" to advise the Administration on management, operation and maintenance of airports. The committee will advise the CAA on evaluation of priority need, the future of given airports, the development of plans and programs requiring a minimum in personnel, etc. Members will serve without pay for one-year terms and represent such agencies as the Port of New York Authority, Dade County (Miami) Port Authority and other bodies, as well as various airports in the country.

The CAA also reports progress in the development or construction of airports. A grant of about $1 million was offered Fort Worth, to permit two 6,400-ft. runways to be paved, besides other improvements. Other offers totalling $84 million have been made.

Roy T. Hurley, director of manufacturing engineering, Ford Motor Co., has been elected president and director of Curtiss-Wright Corp.

Headline: "Seaboard and Western Air's Westbound Freight Hits Peak." Sounded like an accident in the Rockies, until the story made clear that this company was benefitting from heavy westward cargo volume. The airline, a registered irregular common freight carrier is applying for a CAB certificate of public convenience and necessity. Northwest and American Airlines also report heavy volume and attribute it to the evident value of air cargo. Skyways Freight Forwarding Corp. has inaugurated a small package air freight service to cover New York, Chicago, Cleveland, Detroit, New Orleans and numerous other leading cities. Rates exclude mininum charge and include truck delivery to destination. The company will use scheduled airlines and certificated air freight companies specializing in cargo service.

Edward G. Bern has joined Pan American-Grace Airways (Panagra) as sales manager.

The Port of New York Authority has announced the appointment of *Fred M. Glass*, who has resigned as president of Air Cargo, Inc., as director of the newly created Department of Airport Development.

Slick Airways and Pan American World Airways have made an agreement to expedite air shipment by through airway-bill. This cuts excess paper work and permits both lines to publish through cargo rates. This veritable bombshell links the newly certificated Slick company with a major carrier both here and abroad. This puts a new light on the recent CAB decision to give Slick and three other lines a five-year try at all-cargo service. Instead of a "great experiment," it looks as if Slick, for one, won't be groping in the dark.

E. O. Cocke of TWA announces that *S. E. Russ* will take charge of international air cargo and airmail in addition to domestic air freight following the resignation of *R. E. Whitmer*. *W. E. Pluchel* will handle all domestic airmail.

William R. Wood is traffic and sales manager, United Air Lines, Fort Wayne, Ind. Mr. Wood succeeds *J. R. Kelleher*, resigned.

All-cargo plane service will be available for shippers along the Pacific Coast between Los Angeles and Seattle-Tacoma when United Air Lines' new Cargoliner schedules for that area go into effect September 25.

All-cargo planes on a five-day-a-week schedule will link Seattle-Tacoma, Portland, Oakland, San Francisco, Fresno, Bakersfield and Los Angeles. At Oakland the coastwise planes will connect with transcontinental cargoliners. Cargo planes southbound from Portland will be authorized to make one intermediate stop between there and Oakland, in addition to regular stops.

The new schedules will provide all-cargo plane service to virtually every segment of the airline's coast-to-coast, Pacific Coast and California-to-Hawaii route.

Though the company's passenger planes also carry air mail, freight and express along the Pacific Coast, the new cargo service will permit air shipment of large, bulky objects and certain commodities not carried as cargo on passenger flights.

Marine

Consolidated Freight Forwarding Co. announces that a rail-water pool car service is being offered the dried fruit and vegetable trade. This follows a similar announcement earlier concerning canned goods. The service is being conducted in conjunction with the Port of Stockton, and covers receipts at Fresno, San Jose and Oakland, Calif.

Johnsen & Reyerson, Inc., Brooklyn, domestic and export packers, announce the appointment of *Louis Bruchiss* as sales manager.

H. J. Wagner has retired as director of the Norfolk Port Traffic Commission, Norfolk, Va.

Leon Irwin, Jr. is now a member of the Board of Commissioners, Port of New Orleans. Mr. Irwin succeeds *H. Grady Meador*, whose term has expired.

Materials Handling

Illinois Institute of Technology, Chicago, is conducting an evening course in materials handling. Classes have already begun and prompt registration is urged. The course consists of 16 lectures given by *Irving M. Footlik*, general plant manager of Galter Products Co. and secretary of the American Materials Handling Society, on Fridays.

Four of the leading associations in the field of materials handling equipment—the Caster & Floor Truck Manufacturers Assn., the Electric Industrial Truck

Assn., the Assn. of Lift Truck & Portable Elevator Manufacturers, and the Material Handling Institute Inc.—will hold simultaneous meetings at the Hotel Cleveland, Cleveland, Oct. 12-14.

This joint mid-year assemblage, which is reported to have the full endorsement of *W. Van C. Brandt*, new managing director of the EITA, is an outgrowth of an initial cooperative meeting held by the four organizations in Asheville, N. C., last June (see DA, July, p. 20) to discuss mutual problems and to become better acquainted generally, The forthcoming meeting, following the lead of the former one, is designed to further cooperation among the participating associations and to eliminate duplication of activities. Each group will meet separately; the MHI will give a party for members of all four groups.

Tangible evidence of the cooperation of the four associations will be forthcoming the latter part of this year in the form of an educational booklet illustrating, through several hundred case histories, the benefits which industries may expect to derive from the utilization of the various categories of equipment manufactured by members of the associations. The MHI has disclosed that *John Buruss*, chairman of its educational committee, already has received case-history reports for inclusion in the booklet from the three other cooperating organizations. *H. P. Dolan* and *Joel Goldthwait*, secretaries, respectively, of the Caster & Floor Truck Manufacturers Assn. and the Assn. of Lift Truck & Portable Elevator Manufacturers, have taken a personal hand in the forwarding of such information to the MHI, that organization reports.

In an announcement covering the Cleveland meeting, the MHI states that "a mid-year meeting of this character also cuts down the traveling time and expense of a number of members of the industry who are members of two or more of these four trade groups. It is believed that one or two meetings a year of this character should be held in the interest of economy, elimination of duplication of activities, and increased cooperation. There has been a genuine interest on the part of the officers and members and the secretaries of these four groups to cooperate in the best interests of the industry and with as large a number of industrial users as possible."

I. J. Johnson, engineer of Mathews Conveyor Co., New York, believes that recent increased inquiries for materials handling equipment suggest a sharp upturn in sales during the last half of 1949. Cold storage and other warehouses have shown increased interest; however, interest is less in complete installations and more in items.

The newly established North Texas Material Handling Society has elected *Clifford F. Jessee*, Ford Motor Co., as chairman. The new affiliate of the American Material Handling Society begins its work with a charter membership of 55 from Fort Worth and Dallas. *Fred T. Towne*, Gallrein & Towne, Inc., Dallas, is vice president and treasurer; *F. Phelps Jr.*, Waples-Platter Co., Fort Worth, is secretary. (Vitkauskas)

Gilbert W. Chapman was elected president of The Yale & Towne Mfg. Co. Mr. Chapman succeeds *Calvert Carey* as sixth president of this 81-year-old materials handling-lock company. Before joining Yale & Towne, Mr. Chapman was president of the American Water Works Co. *Fred Dunning* continues as executive vice president; *Otto Schwenk* continues as vice president in charge of production.

Motor Carriers

E. C. Ziemer has been appointed Claims Manager of Allied Van Lines, Inc., succeeding *L. J. Richardson*.

The ATA has released a booklet on "Motor Carrier Equipment Financing." This thorough and timely study coincides with a survey of the operations of the Transport Insurance Exchange of Los Angeles. This carrier-owned insurance company reports that it had a far higher percent of premium dollars left to pay losses and loss expense after costs were taken out than was true of stock insurance companies. The ratio was about 88 to 51. Almost 19¢ on each dollar remained for dividends.

Artisan Metal Works Co., Cleveland, announces formation of a truck body division to manufacture a line of parts suitable for assembly into any type of commercial body. These include framing parts for vans, etc.; front assemblies; hardware, doors, panels and even caps for customers' individual designs.

M. J. Tanzer has been elected executive vice president of B & O Terminal, Inc., Grand Rapids, Mich.

Leo C. Kerner has resigned as president of Bridgeways, Inc.

The Bureau of Public Roads calls large sections of this nation's interstate truck routes so obsolete as to threaten any future flow of military traffic in time of war. These arteries would require 11.3 billion dollars to put into shape. If they're that bad, it seems to us, they can't be doing commercial shipments any good. Anyhow, where is all that money going to come from?

Chief Freight Lines has bought, outright, Strickland Transp. Co.'s Dallas-Tulsa and Fort Worth-Oklahoma City routes.

Fruehauf Trailer Co. and Goodyear Tire & Rubber Co. were hosts at two dinners during the course of a meeting of the board of governors of Regular Route Common Carriers Conference, ATA. During the meeting, which took place in Denver, *L. C. Allman* attacked what he called "political pressure" in the trucking field. He pointed out that in Pennsylvania the maximum load allowed is 45,000 lbs.; in Michigan, the maximum is 122,000 lbs.; "Do you think that sound engineering opinion will support such variance as this between two states—when we all know that the highways in Pennsylvania are just as good as those in Michigan?"

Hayes Freight Lines, Inc., Mattoon, Ill., is putting up a new terminal building in Toledo, Ohio. The structure will have 26 freight doors, with overall dimensions of 200 x 40 ft.

Henry G. Hargis, formerly sales manager, Lyon Van and Storage Co., San Francisco area, succeeds the late *Hugh McGlynn* as general manager, San Francisco.

H. V. Wilson has resigned from the Ohio State Highway Patrol to become safety supervisor for the O.K. Truck Lines, Cincinnati.

Red Star Express Lines is building a new outbound terminal in North Bergen, N. J. Located next to the company's marine terminal, the new structure will employ ultra-modern materials handling equipment.

Security Cartage, Inc., Fort Wayne, Ind., has taken a long-term lease on a new building located in Columbus, Ohio. *Ed Phillips* is managing the spacious terminal. (Kline)

Floyd S. Blake has been promoted to secretary-controller of Terminal Transport Co., Indianapolis. *Louis G. Wolff* is now vice president and director of maintenance, and *William G. Waldron* was made vice president and director of terminal operations. (Kline)

M. J. Frechie has been elected vice president of The Texas Line. Mr. Frechie was formerly traffic manager.

Packing & Packaging

A revision of Simplified Practice Recommendation R208-46, Fluid Milk cans, approved by the standing committee of Commodity Standards Division, National Bureau of Standards, has been submitted to distributors and others for study and comment.

A voluntary practice recommendation on packaging, marketing, and loading methods for steel products for commercial, overseas shipments has been approved for promulgation, according to announcement by the Commodity Standards Division of the National Bureau of Standards. Effective September 1 and identified as R237-49, the recommendation will be available in printed form from the office of the Superintendent of Documents, Government Printing Office, Washington 25, D. C. for 40¢ each.

Container Laboratories, Inc. is certified as official testing laboratory for the National Safe Transit Program, sponsored by the Porcelain Enamel Institute. This certification covers both industry and carriers.

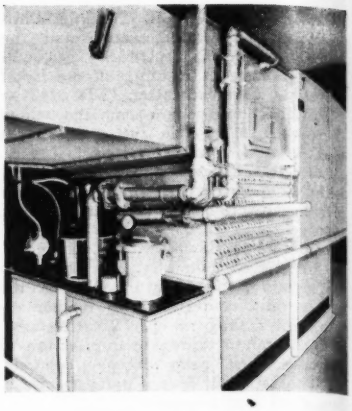
M. F. Weber, American Stove Co., has been appointed chairman of the loading research division of the National Safe Transit Committee. Mr. Weber is traffic manager of the above company. *H. J. Benzie*, General Electric Co., is chairman of the carrier coordinating division of the same committee.

A 15-week course in "Packing for Safe Shipment," directed by *Henry J. Howlett*, president of Container Laboratories, Inc., and a former secretary of the American Management Assn., is being offered by New York University's Adult School the Division of General Education. Such topics as packing and shipping materials, container design, carloading and bracing, export packaging, work simplification, and materials handling, should be in for a good going over, for Mr. Howlett's list of guest lecturers reads like a page from the Blue Book of American industry. Lectures will be conducted by *Robert de S. Couch*, General Foods; *J. D. Mal-*

(*Continued on page* 78)

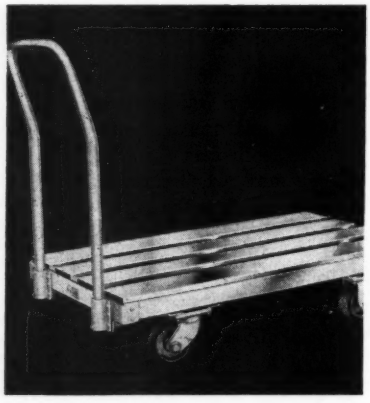
New Products and Procedures

(Right) Frost condensation on low-temperature heat-exchange coils is said to be completely eliminated in the new Kathabar Frostless System, an adaptation of the Kathabar Humidity Control System. Developed by Surface Combustion Corp., Toledo, Ohio, the system has already been tested at temperatures as low as 100 deg. F. below zero. Moisture-accumulation is prevented by use of a spray of Kathene Solution, a lithium-chloride-based substance which absorbs condensed moisture. The absence of frost, the company asserts, assures operation at maximum efficiency and relieves operators of the necessity of shutting down completely for purposes of defrosting. Kathene Solution, which is sprayed continually over the cold metal of the heat exchanger, is said to be non-toxic and non-corrosive, and to last indefinitely.

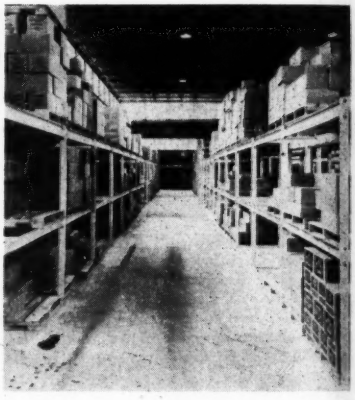


(Left) To fill what it describes as a need for a diesel locomotive crane for light work, American Hoist & Derrick Co., St. Paul, Minn,. offers the American Model 410, "a small crane with big-crane features." Designed for high-speed work, unit is powered by electric-starting diesel engine developing 72 h.p. at 1,600 r.p.m. and has rated capacity of 20,000 lbs. with 40-ft. boom at 12-ft. radius.

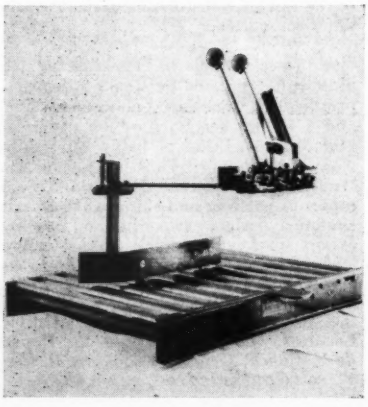
(Right) Carton-handling load-grab arms, which Hyster Co., Portland, Ore., heretofore has made only for its 2,000-lb. capacity fork truck, are now being manufactured for the 4,000-lb. "40" model. The new attachment is said to make it possible to handle practically any merchandise in paperboard cartons without using pallets. Handles loads up to 2,310 lbs., rated at 24-in. load centers.



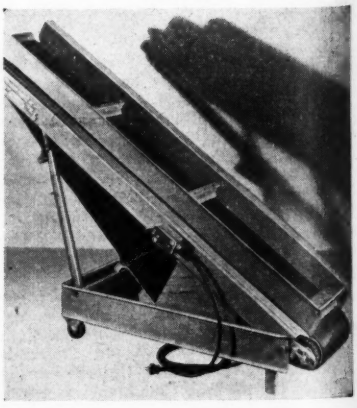
(Left) Tobey Mfg. Corp., El Segundo, Calif., has added Tobey Junior to its line of lightweight heavy-duty materials handling equipment. Designed as a flat-bed truck for lower-capacity operations, unit is constructed of heat-treated aluminum-alloy angles and Hat sections. As in the company's heavier-duty models, riveted construction is used throughout. Comes in 24 x 28- and 30 x 60-in. bed sizes.



(Right) Constructed of structural channel, the prefabricated pallet rack manufactured by Equipment Mfg. Inc., Detroit, is composed of but two parts: an upright end-member, which can serve at either end or between sections, and the bed-member. Beds are constructed with two channel cross-members. Dimensions can be varied to fit load requirements and pallet sizes. All joints are welded.



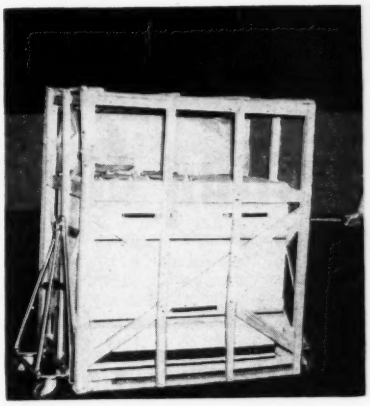
(Left) Acme Steel Co., Chicago, has announced the E10B1, a new conveyor strapping unit consisting of strapping tool mounted on a roller conveyor section. The unit, the company declares, is particularly well suited to strapping corrugated or solid fibreboard boxes of canned goods, but can be used with other products as well. Mount adjustable for packages of from three to 23 in. in height.

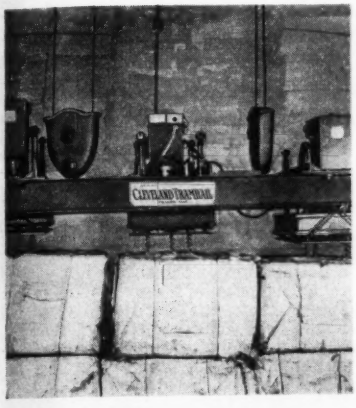


(Right) Arrow Products, Inc., Grand Rapids, Mich., has asserted that "Pressman," its new shop conveyor, is easily portable by one man, and that it incorporates adjustable discharge height, self-contained power and enclosed power-drive for safety. Unit is available in six- and eight-foot lengths. The 12-in. pliable belt is three-ply fabric impregnated with Neoprene rubber. Model is AP 105-815.

(Left) Incorporating an adjustable-height feature, Barrett Safety Ramp, manufactured by Barrett-Cravens Co., Chicago, is said to solve problem created by differences between dock-heights and heights of trucks and trailers. Mechanical screw-type lifting gear provides 12-in. variation in height at one end. Model shown is five feet wide, 14 ft. long, and has capacity of 6,000 lbs. Available in 10-ft. length.

(Right) Hoistrux, a new portable lifting and moving device manufactured by Buffalo Hoistrux Co., Buffalo, is designed to handle merchandise or equipment of almost any size and shape weighing up to 2,000 lbs. Utilizing the lever principle, the unit is said to permit one man to lift a ton to a height of four inches with a minimum of effort. Net weight, 35 lbs. each; width, 20 in.; height, 32 in.



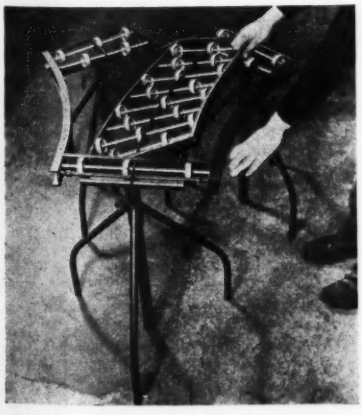


(Left) A new type of screw grab for handling pulp or similar materials has been developed by Cleveland Tramrail Div., The Cleveland Crane & Engineering Co., Wickliffe, Ohio. The screw grab has three floating heads, each with three motor-driven screws or augers which screw into the pulp and hold it secure in transit. Three bales can be handled at a time. Bales can be picked up even when stacked unevenly.

(Right) Specialized paper-scoop and roll-clamp, capable of handling and stacking rolls of paper and newsprint up to 50 in. in diameter and weighing up to 5,500 lbs., has been announced by Towmotor Corp., Cleveland. The blade of the hinged paper-scoop is inserted under the roll, which is then held by hydraulic clamping arm. Roll can be tilted from end to side position or vice-versa, and raised to 230 in.

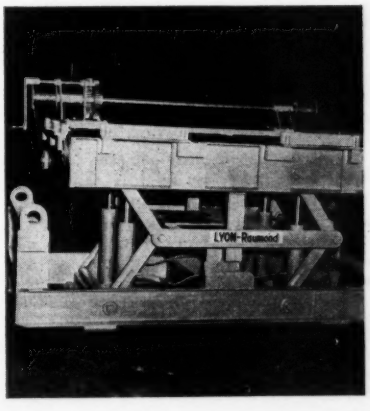
(Left) Adjustable skid and pallet racks of all-purpose metal framing made by Unistrut Products Co., Chicago, simplify materials handling at Emerson Electric, St. Louis. Latter had used Unistrut for other purposes and reportedly decided on it for pallet racks because of its re-usuable and adjustable features and because its "nut in the slot" system eliminated need for drilling and welding.

(Right) Designed to handle wood barrels or steel drums weighing up to 1,000 lbs., this heavy-duty one-man barrel truck, recently placed on the market by Buffalo Caster & Wheel Corp., Buffalo, is a double center-column type with handle-bar hand-grips. Handle is covered with safety rubber. Wheels are 10 in. in diameter and have molded-on rubber tires with Hyatt roller bearings. Chime hook adjustable.



(Left) The Sage "Y" Switch, a product of Sage Equipment Co., Buffalo, is designed to direct flow of material from one single line into two lines, parallel or converging, at 45-deg. angles either right or left. Operator flips center section to change direction. A 90-deg. turn right or left may be effected through use of regular 45-deg. Sage curves. "Y" Switch is available with wheels or rollers.

(Right) Hydraulic die-handling truck, manufactured by Lyon-Raymond Corp., Greene, N. Y., has capacity of 20,000 lbs. and features four hydraulic lifting cylinders, motor-driven hydraulic pump, provision for inserting and removing die slings, hand winch, retractable wheels and roller top. Range of elevation of from 28 to 44 in. is stated to permit use of the unit with presses of various heights.



Getting down to *Cases*

By LEO T. PARKER
Legal Consultant

TRANSPORTATION

Things You Can Do

YOU CAN obtain a permit "for hire service" based on contract. Considerable discussion has arisen from time to time over the legal questions: What is the legal distinction between (1) a common carrier; (2) a contract carrier and (3) a carrier for hire? Can the latter carrier obtain a permit to transport passengers and freight over routes now served by other carriers?

In Orlando Transit Co. v. Florida Railroad & Public Utilities Commission, 37 So. (2d) 321, Fla., a company applied to the Public Utilities Commission for a permit to operate on the "for hire" basis over the public highways. The Commission refused to issue the permit, and the company appealed to the higher court, which reversed the Commission, saying:

"A 'for hire service' has no continuous or recurring carriage under contract unless made so by the consent of the parties. . . . It was the intention of the Legislature to provide the general public with a 'for hire service' based on a contractual relationship." This court clearly distinguished between carriers as follows: The law makes it the duty of a common carrier, within the limits of its ability, to serve all persons applying for transportation. The law makes it optional with a "for hire service" to carry only for those applying for service. A "contract carrier," sometimes designated "private carrier," is one who transports merchandise under contract which may cover a considerable duration of time, not a single trip.

Also, a contract carrier or private carrier is liable for damage to transported merchandise only if the testimony proves that the damage resulted from negligence of its employes, whereas a common carrier is likened to an insurer. In other words, a common carrier is liable for all damage or losses except those caused by (1) an act of God, (2) inherent quality of merchandise, (3) fault of shipper, (4) a public enemy of the United States.

YOU CAN avoid liability for damage or other negligence in delivery of merchandise if you prove that the consignor or consignee accepted money as settlement.

For example, considerable discussion has arisen from time to time over the legal question: Is a carrier always liable in damages for delivering merchandise without collecting C.O.D. charges on the amount of drafts attached to the bills of lading? The answer is no if the shipper and consignee make a secret agreement compromising their controversy.

In Griggs v. Stoker Service Co., Inc., 50 S. E. (2d) 914, N. Car., the testimony showed the facts to be as follows: A manufacturer made 12 shipments of heating equipment to the Stoker Service Co. from Pennsylvania to North Carolina upon motor trucks operated by the Griggs Trucking Co. The shipments were consigned to the order of the manufacturer and were made on uniform order bills of lading. Each bill of lading contained these words: "The carrier shall not make delivery of this shipment without payment of freight and all other charges."

As shipments were made, drafts for the sale prices were drawn upon Stoker Service by the manufacturer and were forwarded with the bills of lading attached to banks in Charlotte for collection. These drafts totaled $21,925.98. Stoker Service never paid the drafts or obtained the bills of lading. When the shipments arrived, the carrier delivered them to Stoker Service without collecting the freight charges and without demanding the surrender of the bills of lading. In view of the fact that the manufacturer and the buyer had made a contract without notifying the carrier, by which contract the manufacturer paid the buyer for a part of the heating equipment, the higher court relieved the carrier from future liability, stating:

"A shipper ratifies a wrongful delivery by a carrier by accepting from the person to whom delivery is made, payment of the entire price of the goods or part payment with a promise to pay balance." This court indicated that the carrier would have been liable to the seller, the York-Shipley, for $21,925.98 if the testimony had shown that the seller had not made an agreement with the buyer regarding payment for the heating equipment.

Things You Can't Do

YOU CAN'T recover a loss under an insurance policy whose terms you violated. For example, in Milton Co., Inc. v. Travelers Indemnity Co., 71 N. E. (2d) 232, a company held a burglary insurance policy. A burglary loss was discovered on the morning of Nov. 30. The company's officials neglected until Feb. 10 to notify the insurance company of the loss.

The insurance company refused to pay the loss and directed the attention of the company's officials to a clause in the policy: "Affirmative proof of loss under oath shall be furnished to the company within sixty days from the date of the discovery of the loss." The company filed suit, but the higher court refused to hold the insurance company liable, saying:

"It is established law that the failure to file the required proofs of loss within the time limited bars recovery unless the failure is excused or has been waived."

YOU CAN'T avoid liability or responsibility for acts of your employes. In Casey v. Gibson, 216 S. W. (2d) 266, Tex., the higher court held that a notification by the signer of the bond to a corporation's agent relieves the signer from further liability on the bond. The court said:

"It is a general rule that notice acquired by an agent within his express, implied, or apparent authority, is notice to his principal."

YOU CAN'T avoid liability where you make an extra charge for special services. For example, in Fowel v. Wood, 62 Atl. (2d) 636, Dist. of Col., the court explained that under ordinary circumstances a carrier who rents a space for storage or safe-keeping of merchandise is not liable for loss of or damage to the goods, unless the testimony proved that the loss resulted from negligence of the carrier. However, if an extra charge is made for special services or for supervision of the goods, this court explained, the owner of the goods may be entitled to a recovery although the loss or damage was not caused by negligence of the bailee, or carrier.

YOU CAN'T disregard liability provisions of a uniform bill of lading. In Interstate, 69 S. Ct. 692, the higher court held that a common carrier must issue its bill of lading to a freight forwarder who must issue a bill of lading to its shipper. Also, the court held that the liability provisions of the uniform bill of lading issued to the forwarder is binding on the parties.

WAREHOUSING

Things You Can Do

YOU CAN invalidate a zoning ordinance which does not clearly define the zoned area. In Village of Westlake v. Elrick, 83 N. E. (2d) 646, Ohio, one Elrick obtained from a city a permit to erect a warehouse building to be used for storage purposes. However, Elrick began printing a newspaper instead of using the building for warehouse purposes. A suit was

filed against him by the city to invalidate the permit.

The higher court refused to revoke the permit and held the zoning ordinance void because it did not define with certainty the location and boundaries of the areas affected by the zoning ordinance.

YOU CAN compel a purchaser of goods at auction to accept and pay the full contract price, even though the goods are worthless. For instance, in Bedgood v. Jeffcoat, 50 S. E. (2d) 260, Ga., it was shown that one Bedgood purchased merchandise at an auction sale. The sale was without any warranty. Bedgood accepted delivery of the merchandise and gave his check for the purchase price. Later, Bedgood stopped payment on the check and refused to pay, contending that the merchandise was worthless.

Notwithstanding this contention, the higher court ordered Bedgood to pay for the merchandise. This court explained that unless testimony proves that an auctioneer guaranteed the good condition of the merchandise before it was auctioneered, the purchaser takes the merchandise "as is."

YOU CAN avoid penalties specified by a state for failure to operate your warehouse according to the law, if the testimony is not clearly against you. In State ex rel. Moody v. Stem, 50 S. E. (2d) 175, S. Car., it was shown that a state law stipulates and restricts charges to be made by warehousemen who sell goods in warehouses. This law provides a severe penalty for violation of the law regulating the statistics of goods sold.

The higher court refused to convict a warehouseman, even though testimony showed that he had charged a higher fee for his services than that stipulated by the state law. The court said: "The principle is well established that penal statutes are strictly construed, and one who seeks to recover a penalty must bring his case clearly within the language and meaning of the statute awarding the penalty."

YOU CAN win a suit filed by a customer who alleges that his goods were lost or damaged while in storage, if he fails to prove the exact value of the goods as of the date they were accepted for storage. This is so because the correct measure of damages for injury to stored property is the difference in value of the property immediately before and immediately after injury.

For example, in Conner v. Aalco Moving & Storage Co., 218 S. W. (2d) 830, Mo., one Conner delivered her household goods and tablewares to the Aalco Moving and Storage Co. for storage. She claimed that upon redelivery of the goods to her three years later several articles were missing and several other articles had been damaged. The warehouse company was sued for damages. Conner did not stipulate in her suit the value of the goods at the time she placed them in the warehouse for storage. Therefore, the higher court refused to approve the jury's verdict holding the warehouse company liable. The court said:

"The jury would have to guess or speculate as to the fair reasonable value of these goods at the time plaintiff demanded their return to her. Then, as to the goods damaged, there was no testimony as to their reasonable value immediately before the damage and immediately after the damage, or at any other time."

Things You Can't Do

YOU CAN'T avoid liability for negligent loss of, or damage to, stored goods while in possession of your employe or agent. Also, a proposal or bid which includes an "all risk insurance" clause is binding, whether the goods are in your possession or in possession of your agent.

For example, in United Van Lines, Inc. v. Haley, 218 S. W. (2d) 715, Ark., testimony brought out these facts: One Haley began negotiations with the United Van Lines for the transportation of his household goods from Little Rock to Houston. These negotiations were carried on, on behalf of United Van Lines, through its agent, Merchants Transfer & Warehouse Co., whose representative furnished Haley with a proposal or bid signed "United Van Lines, Inc., Merchants Tfr. & Whse. Co., Agt., By E. B. Baker, Agent." The estimate, which was in the amount of $266.59, was itemized in the proposal, and included this item: "All risk insurance in the amount of $1,500 . . . $7.50.

The following day, the Merchants Transfer and Warehouse Co. took possession of the household goods, packed them for shipment to Houston, gave Haley a receipt and then moved the goods, storing them in the warehouse of the Merchants Transfer and Warehouse Co. While in storage, the goods were destroyed by fire. Haley sued the United Van Lines for value of the furniture.

In holding Haley entitled to recover the full value of the furniture, the higher court said: "We think the jury was warranted in finding that a binding contract existed between the parties hereto. They were also warranted in finding, under the terms of the contract, that appellant [United Van Lines] had agreed to insure appellee's [Haley's] household goods against 'all risks' in the amount of $1,500, for a charge of $7.50, to cover said insurance and that this stipulation in the contract was binding on appellant."

YOU CAN'T acquire an easement or right to use a spur track belonging to another. Hence, you had best purchase the track or pay its owner for a valid easement if you are to continue using the track. In Tift v. Golden, 51 S. E. (2d) 435, Ga., it was shown that a corporation has a warehouse for the storage of commodities. The warehouse is served by a service- or switch-track, which extends from the main railway line to the warehouse. The corporation, which for many years enjoyed the right of this rail service at its warehouse, paid for switching charges, etc. Then in 1948 the owner of the land on which this spur-track is located began tearing up the track.

The corporation filed suit, asking the court to grant an injunction to prevent removal of the track, on the grounds that it was the only means of rail ingress and egress to and from its property. It contended further that it had an easement to use the track. The higher court held that the property-owner could remove the track, declaring that the corporation had no easement.

PACKAGING

Things You Can Do

YOU CAN use a common name as your trade-mark without infringement liability. For example, in Fruit Growers Co-op v. M. W. Miller & Company, 170 Fed. (2d) 834, the Fruit Growers Co-operative sued the M. W. Miller & Company. The former alleged that it owned the trade-mark "Sturgeon Bay," and that M. W. Miller & Co. infringed the trade-mark placing labels bearing the name Sturgeon Bay in prominent letters on cans containing fresh or processed red sour cherries, and by selling the product so labeled in interstate and intrastate commerce.

The court held that the mark "Sturgeon Bay" is merely a geographical name descriptive of the place where the cherries are produced, and, therefore, the trade-mark is invalid. Also, the court held that the mere fact that M. W. Miller & Company prominently displayed the words "Sturgeon Bay" on its labels did not mean that it was guilty of unfair competition, since *no convincing* testimony was given that purchasers were deceived into buying one product when believing they were buying the other.

YOU CAN avoid paying wages specified by the Fair Labor Standards Act to employes who process perishable foods. For example, in U. S. Department v. Hunt Foods, Inc., 167 Fed. (2d) 905, it was shown that a company is engaged in the production of apple juice and other products from apple peelings and cores received from dehydrating plants. The question presented the court was: Is the company exempt from paying its employes wages specified by the Fair Labor Standards Act? The higher court held in the affirmative, saying: "The dehydrating, and making of juice and pomace are all part and parcel of the speedy and continuous process of converting the perishable apple into a non-perishable salable product."

YOU CAN avoid paying compensation to a motor truck driver injured while using the truck for his own pleasure. For example, in Thomas v. Godchaux Sugars, 33 So. (2d) 414, La., the testimony showed facts, as follows: A truck driver was instructed to take a truckload of merchandise to a designated place for delivery. The employe picked up two friends and went to Valley's Pool Hall where they remained for about three hours. Then they started out in the truck which struck a depression in the street, swerved to the curb and ran into a tree. The truck driver was killed.

The higher court denied payment of compensation under the State Workmen's Compensation Act, saying: "One thing is clearly shown by the evidence. That is that they had diverted entirely from the route they were instructed to take and had left the course of their employment for purposes of their own."

DISTRIBUTION ACTIVITIES

(*Continued from page* 73)

colmson, Robert Gair Co.; *Fred Meendsen,* Union Bag and Paper Co.; *Frank Campins,* Polymer Industries; *Harry Chapin,* The Hinde and Dauch Paper Co.; *Alfred W. Hoffman,* Container Laboratories, Inc.; *Allyn Beardsell,* Western Electric Co.; *C. D. Hudson,* National Wooden Box Assn.; *Theodore Gross,* packaging consultant; *Edward Dahill,* Assn. of American Railroads; *John G. Crowell,* Philco Corp.; *Clifton Cox,* packaging consultant; *George A. Farrah,* National Container Corp.; *Burr Hupp,* Drake, Startzman, Sheahan and Barclay, Inc.

Specialists in advertising, sales, packaging, materials handling, and just plain business, on hand for the Second Wayne University Packaging and Materials Handling Institute, to be held in the main auditorium, Packham Educational Memorial, Detroit, Oct. 3-7 in conjunction with the Fourth Annual Industrial Packaging and Materials Handling Exposition, will hear *Dr. Spencer A. Larsen,* chairman of Wayne University's Department of Business, get proceedings under way at 10 a.m. Oct. 3, the day before the wraps are scheduled to come off the several score exhibitions which comprise the offering of the Institute's function in Convention Hall. *James P. Kinney,* vice president, Gordon, Kinney & Staninger, Inc., Detroit, has been named general chairman of the exposition.

Distribution operations, with special emphasis on packaging and materials handling, will hold the limelight in a series of Institute talks to be delivered by such industrial authorities as *R. F. Weber,* International Harvester Co.; *Earl B. Candell,* General Electric Co.; *C. C. Whiteford,* Ford Motor Co.; *W. A. Nauman,* Caterpillar Tractor Co.; *A. R. Schroeder,* New York Central System; *Charles J. Zousi,* Container Laboratories, Inc., *Ralph A. O'Reilly, Jr.,* General Motors Corp.; and *Frank W. Green,* packaging consultant, Springfield, Mass.

Railroads

Norman J. MacMillan has been appointed vice president and general counsel of the Canadian National Railway Co. and its subsidiaries and the Canadian National West Indies Steamships Ltd.

The Department of Agriculture reports continued progress of the highway carriers in obtaining new business in the food field and taking some away from the railroads. They report that western roads are urging eastern roads to cut rates on such commodities as dressed poultry, eggs, and cheese. The 9.1-percent rate increase for the railroads, it is shown elsewhere in "Distribution Activities," seems to be easier on agricultural items, thanks to the ICC. Is this a coincidence, or is it . . .?

The railroads (interstate) have been given an average freight rate increase of 3.7 percent by the ICC. More specifically, the 5.2-percent increase of last December is erased and is replaced by a 10-percent increase for eastern and southern railroads, a nine-percent increase for Zone 1 of western trunkline territory, eight percent for the rest of that territory and nine percent on inter-territorial traffic (excluding that in the East and South).

Accompanying this concrete beneficence was a stern admonition to correct maladjustments in some rates and a warning that rate increases have diverted some traffic to other transportation media. Further, the ICC suggested that "more must be done to increase the efficiency and reduce the cost of railroad operations." Lecture or no lecture, this means more money in railroad "pockets." The new increase, it is estimated by the ICC, will amount to $684 million annually.

An interesting fact of the ICC rate increase award is the fact that some commodity categories did not fare quite so well as would have been the case if the carriers' petition had been granted. For example, analysis of ICC data shows that the total rate increases since June, 1946, would be 58.5 percent on Manufactures and Miscellaneous and 44.9 on agricultural products. Had the petition been the basis for rates, the increases would have been 70 percent for M and M and 54.7 percent for agricultural products. Computation shows that the carriers wanted favorable consideration for relatively higher agricultural products' rates; conversely, the ICC cut down harder on rates for agricultural items.

Monthly Comment, the ICC report on rail statistics, shows in its August issue that freight operating revenue for the first half of 1949 as against the first half of 1948 was 5.2 percent below last year. The Pocahontas region (largely coal traffic) showed a drop of only 2.6 percent as against 4.5 for the West, 7.5 for the Southern region and 5.6 for the Eastern district. Taking June alone, the drop from June, 1948, was 2.7 percent in freight revenue. The report (p. 11) contrasts the increased cost of solid fuels with the drop in cost of fuel oil and diesel fuel, thus giving another filip to diesel engine use. In this connection, the AAR Car Service Division's report for August 20 shows that, whereas in July, 143 diesels were installed (new), only four steam locomotives were newly installed. For the 12 months ended July 31, the respective figures are 1,082 and 37.

Another increase affecting shipper has already gone into effect. Demurrage charges on railroad freight cars have been upped to three dollars per car per day for the first four days after 48 hour free time and six dollars per day thereafter. Intrastate traffic in Minnesota, South Carolina, Mississippi, Louisiana and California are unaffected.

Opinion Research Corp. reports that its recent survey, made for the Association of American Railroads, shows that only 11 percent of the public favors government operation of railroads. The above percentage is reported to be the lowest since the surveys were initiated in 1941. The trend is fine; but why the word "only?" Only 11 percent is too much by precisely 11 per cent. When a substantial segment of the public expresses faith in railroad socialism, then it is time to wonder whether 11 percent of the people are thoroughly infected with the pink virus. Chances are, however, that many people use colored glasses only when they look at the nation's premier transportation industry. This suggests a new level of responsibility on the part of railroad management; what if the public, or a considerable part of it, fails to take off the goggles at all?

Another sign of the times is the fact, as stated by *Walter Reese* of Railway Express Agency, Chicago, that the 40-hour week for the company's employes will affect pickups and delivery in smaller communities. However, larger cities will be unaffected since RE has its own facilities there; in smaller cities, the agency depends on railway employes.

Railway Express Agency has made the following appointments: *Robert H. Peterson*—superintendent New York City office division, with headquarters in New York; *Walter H. Hoffman*—superintendent of the New York City vehicle operations; *R. R. Tulloch*—superintendent with headquarters in St. Paul; *Oliver G. Swenson*—assistant vice president in charge of traffic, with headquarters in New York; and *John P. Foster*—general manager of the Mississippi Valley department, with headquarters at St. Louis.

With new freight cars being installed at a rate about 15 percent below retirements, and the likelihood of a drop in installation of new cars, the total number of freight cars will probably continue to decline for several months at least. Heavy retirements largely reflect lower traffic. Incidentally, some contract builders hope to benefit from a 40-hour week for railroads; it is thought that some roads would tend to turn work from private shops over to the contract shops. (Vitkauskas)

Traffic

Harold R. Rodahl has been appointed traffic manager of Adams Corp., and will be stationed at Edgerton, Wisc. Mr. Rodahl was formerly with Highway Trailer Co., Beloit and Liberty Trucking Co., Chicago.

E. Nelson Frost has been appointed traffic manager of Allied Oil Co., Inc., Cleveland.

J. R. Grimes has been appointed assistant fuel traffic manager at Chicago, according to Burlington Lines. *J. D. Rezner, Jr.,* is assistant to the vice president, traffic.

Alfred Alexander, Tomlinson Fleet Co., was elected president of the Cleveland Propeller Club. Other new officers include *William F. Rapprich,* Cleveland-Cliffs, first vice president; *William A. Turner,* M. A. Hanna Co., second vice president; *J. L. Tinny,* Pennsylvania-Ontario Transportation Co., treasurer; and *George H. Hieber,* Marsh & McLennan, secretary. *Mr. Hieber* and *Walter Mahle,* Pennsylvania Railroad, were elected governors. (Kline)

R. H. Spencer succeeds *C. J. Walsh* as traffic manager of the Doughnut Corp. of America.

J. L. Abramson has succeeded *C. C. Ross* as traffic manager of Duluth, Missabe

& Iron Range Railway Co. Mr. Ross has retired.

Paul H. Hardin, assistant traffic manager of Coca-Cola Co., was elected president of the new Atlanta Chapter, Interstate Commerce Commission Practitioners Assn.

Raymond A. Richards has been appointed general traffic manager of Mathews Truckng Corp., Ontario, N. Y. Mr. Richards comes from the traffic department of General Foods Corp.

R. A. Greene has been appointed field traffic manager of the National Distillers Products Corp., with headquarters in New York.

W. F. King, formerly traffic manager with the Baltimore Porcelain Steel Corp., Baltimore, has accepted the position of general traffic manager with National Truckloading and Terminals, Inc., same city.

Ralph W. Rossiter has been appointed acting cargo traffic superintendent at Lima by Pan American-Grace Airways.

Angus V. McLeod has been appointed general traffic manager of Permanente Metals Corp. Mr. McLeod was formerly with Luckenbach Steamship Co. *S. C. Knight* has been transferred to 'Kaiser Steel Corp. as assistant general traffic manager.

Norman B. Lindstrom succeeds *Walter J. Swaja* as traffic manager at Minneapolis for Pillsbury Mills, Inc. *Lief Hermstad* will be in temporary charge of the mill traffic department at Minneapolis.

Henry E. Manker has been appointed general traffic manager of Plomb Tool Co., Los Angeles.

Joseph J. Usher has been appointed manager of the Port of Seattle's traffic department.

John C. Gutsch, freight manager, Rock Island Lines, has retired after 52 years of service.

Albert L. Peterson has been appointed manager, transportation department, Somerset Refinery, with office at Springfield, Ill.

Warner B. Shepherd, general traffic manager, Aluminum Co. of America, has been elected president of the Traffic Club of Pittsburgh.

E. W. Rich, formerly assistant traffic manager of Davidson Transfer & Storage Co., Baltimore, is now traffic manager of Ward Trucking Corp., Altoona, Pa.

Warehousing

American Chain of Warehouses, Inc., announces the appointment of *Henry Holder Becker* as western manager, Chicago, effective August 5, 1949. Mr. Becker served a Chicago warehouse for many years both in sales and in operating capacity. After the war, he entered the employment of an organization which specialized in materials handling services and remained with this concern until his recent appointment as Chain manager.

American Chain of Warehouses Inc. has accepted two new members: Farnsworth Merchandise Storage Co., Worcester, Mass., and Lyon Van and Storage Co., Spokane, Wash.

The Department of Commerce forecasts increased outlays in private industry for warehouses. The outlook is favorable, it says. Let's look closely at this item, one that was given prominence in the daily press. The report actually states that if the demand for space in warehouses continues on the same level *as in 1948,* expenditures for warehouse construction will be equal (in 1950) to the 1948 level and continue to rise thereafter. Not only does the report base its thinking in terms of 1948, but it finds difficulty in separating warehouse construction data and estimates from other types of construction, notably office buildings. Further, the Department estimates average vacancy space ratio for warehouses at from 10 to 15 percent for warehouses *from 1945 to 1948.* Now what the Department ought to do is forget 1945, study 1949 figures and revise its estimates. In the warehouse industry, 1945 is a happy memory, alas.

Mayflower Warehousemen's Assn. has announced the following committees for the year 1949: *Advertising Committee—M. R. Goodwin,* Spokane, Wash., chairman; *C. L. Camberin,* Tacoma, Wash.; *R. G. Culbertson,* Seattle; *H. W. Danskin,* Portland, Ore.; *Arthur Dowell,* Victoria, B. C.; *Frank C. Fairchild,* Yakima, Wash.; *Frank P. Finnegan,* Newburgh, N. Y.; *Harry Johnston,* Vancouver, B. C.; *J. Lowell McAdam,* Pasadena, Calif.; *Harry C. Peters,* Louisville; *C. L. Richardson,* Des Moines; *Sidney J. Wald,* Houston; *Lawson W. L. White, Sr.,* Huntsville, Ala. *Agency Relations Committee—A. H. Naish,* Cincinnati, chairman; *Willis F. Day,* Toledo; *A. D. Church,* Barrington, Ill. *Constitution and By-Laws Committee—W. N. McKinney,* Dallas, chairman; *George E. Nelson,* Kenosha, Wis.; *William A. Parton,* San Jose, Calif.; *Ward R. Scull,* Newport News, Va.; *Ray Wagner,* Springfield, Ohio. *Executive Committee—Carl F. Bailey,* Huntington, W. Va.; *Harold E. Burch,* Pueblo, Colo.; *Kenneth Christie,* Butte, Mont.; *Art T. Kriegsman,* Pekin, Ill.; *Charles H. Samuels,* Oakland, Calif. *Insurance Committee—W. Lee Cotter,* Akron; *Fred L. Koehler,* East Orange, N. J.; *Guy M. Penn,* Santa Ana, Calif.; *F. J. Roederer,* Davenport, Ia.; *John P. Wooldridge,* Trenton. *Nominating Committee—R. G. Culbertson,* Seattle, chairman; *L. C. Abbott,* Forth Worth; *Russell D. Bray,* Kansas City, Mo.; *Arthur F. Hauselman,* Middletown, Ohio; *D. W. Heidrick,* Wichita, Kan.; *George W. Jones,* Providence; *J. P. Ricks, Sr.,* Jackson; *V. D. Slocum,* Van Nuys, Calif.; *John P. Wooldridge,* Trenton. *President's Advisory Committee—Leonard S. Clark,* Greenwich, Conn.; *W. Lee Cotter,* Akron; *R. G. Culbertson,* Seattle; *Frank E. Hess,* Waterbury, Conn.; *A. A. Leonard,* Detroit; *J. Lowell McAdam,* Pasadena, Calif.; *K. K. Meisenbach,* Dallas; *A. H. Naish,* Cincinnati; *H. C. Neal,* Cleveland; *J. P. Ricks, Sr.,* Jackson; *E. C. Spargo, Sr.,* Bridgeport, Conn. *Research and Development Committee—Gordon E. Millott,* Sandusky, Ohio, chairman; *Herbert C. Neal,* Cleveland; *Ray Wagner,* Springfield, Ohio. *Warehouse Receipts and Moving and Storage Contract Committee—R. T. Blauvelt, Jr.,* East Orange, N. J., chairman; *Charles E. Farnung,* Rochester, N. Y.; *William A. Reger,* Philadelphia; *Ernest A. Santini,* New York.

NARW has received the following applications for membership: Manhattan Ice and Cold Storage, Inc., Manhattan, Kansas; Manufactured Ice Co., Bloomington, Ill., and Kern Ice & Cold Storage Co., Inc., Bakersfield, Calif.

The National Wholesale Druggists Assn. is making a survey of costs of warehouse operations. It would appear that the private warehouse owners are very much concerned with cost levels which are high and largely due to increased labor costs and higher shipping rates.

Wisconsin Warehousemen's Assn. met on July 28 at Milwaukee. This active organization did much to amend state legislation bearing upon exemption of goods in public warehouses from personal property taxes where those goods came from outside the state. The association succeeded in having the legislation retain the exemption and simplify reports that Wisconsin warehousemen had to make.

Wisconsin Warehousemen's Assn. has announced the following committees for the year 1949: *Membership*— all members of the association. *Program and Attendance—T. B. Willard,* chairman; *Emil Juedes; A. J. Schneider. Finance and Auditing—W. A. Moore,* chairman; *H. S. Rummel; George Nelson. Law and Legislative—Philip G. Kuehn,* chairman; *T. L. Hansen; W. A. Walker. Insurance—E. H. Ottman,* chairman; *H. P. Melius; Charles Ashley. Traffic and Transportation—C. P. Rookey,* chairman; *W. B. Sweo; Thomas B. Bentley, Jr. Licensing Standards—Howard Fabian,* chairman; *M. E. West; H. E. Reynolds. Ports and Terminals—A. L. Fischer,* chairman; *Harry Pratt; Willis Warren. Warehouse Guide—Willis Warren,* chairman; *Norbert Meyer; H. M. Willenson. Executive Committees—Merchandise Storage—T. L. Hansen,* chairman; *T. B. Willard; Emil Juedes. Cold Storage—Henry Kuehn,* chairman; *H. G. Rummel; M. E. West. Furniture Storage—C. P. Rookey,* chairman; *A. Grueshow; Wm. J. E. Schaus.*

The Personal Property Tax Law is being studied and may again come up for further revision. As *Philip Kuehn* states in his report on this, "we must therefore remain alert . . . The success of this venture should not be attributed wholly to the committee who went to Madison (Wisc.) If it had not been for the very excellent work done by a large number of warehousemen throughout the state, the bill may have failed." Perhaps it's the vigorous climate in that great dairy state, but the warehousemen up there are right on their toes. The association gave out a list of legislators who voted against the bill. *President Laubenstein* of that organization is doing a good deal of contact work among industries looking for new storage business opportunities.

The Board of Directors of Youngstown Cold Storage Co. announces that *Wilbur H. Shumaker* was elected president and treasurer; *Frank L. Lutts,* first vice president; *W. Douglas Hopkins,* second vice

president; *Ray C. Tower*, secretary; *Clarence Broeker*, manager.

Miscellaneous

Roy C. Klostermeyer, who recently resigned as western traffic manager for Ajax World Wide Freight Corp., Chicago office, is associating with the Grabler Mfg. Co.'s sales department.

James W. Baker, Baker-Lawton and Ford, Inc., Shreveport, La., has been reappointed chairman of the Domestic Distribution Department Committee, Chamber of Commerce of the United States.

Bemis Bros. Bag Co. calls attention to the record set by *H. H. Allen*, vice president, and a director. Mr. Allen has served 60 years with the company.

The Bureau of Public Roads is now part of the Department of Commerce. The change went into effect August 19 under an order of the President.

R. E. Fox has been promoted to assistant manager of transportation and warehousing, Birds Eye-Snider division, General Foods Corp., and *Richard Gelin* is now supervisor of methods and standards.

John Simon, district sales director for the Pacific Coast Division of the Keystone Steel & Wire Co., has been promoted to manager of warehouses and house accounts. In his new position Mr. Simon will be responsible for warehouse stocks in strategic distribution points.

E. A. Meyer has resigned as Administrator of the Research and Marketing Act. The new director of the Shipping and Storage Branch, Production & Marketing Administration (also in the U. S. Dep't of Agriculture) is *Martin J. Hudtloff*.

Toledo Transportation Club elected *Phil Schorr*, Wabash Railroad Co., as president. He succeeds *R. E. Deitemeyer*, Textileather Corp. Others elected include: *H. G. Huhn*, Libby-Owens-Ford Glass Co., first vice president; *L. D. Tipton*, Chesapeake & Ohio Ry., second vice president; and *C. H. Lorenz*, Wabash Railroad, secretary-treasurer. Newly elected to the executive committee were *Paul Breno*, National Carloading Co., *H. G. Hansen*, Mennel Milling Co., *R. W. Lemon*, New York Central, *H. F. Meyers*, Lake Motor Freight Lines and *L. J. Prior*, National Supply Co.

SITUATION WANTED

Thoroughly trained Industrial Traffic Manager, 20 years experience, seeking position where complete knowledge of traffic administration is required and competent performance rewarded. Graduate of Traffic Law and I.C.C. Procedure Course, also registered to practice before the Interstate Commerce Commission. Have been eminently successful in obtaining important rate adjustments for present and former employers. Will consider re-locating anywhere in U. S. and approximate salary requirements $7500 yearly.

Box O-655 c/o DISTRIBUTION AGE
100 East 42nd St., New York 17, N. Y.

Coming Events

Oct. 3-5—4th Annual Convention, National Defense Transportation Assn., Atlanta-Biltmore Hotel, Atlanta.

Oct. 4-6—4th Annual Industrial Packaging and Materials Handling Exposition, Convention Hall, Detroit. In conjunction: 2d Wayne University Packaging and Materials Handling Institute, Oct. 3-7, main auditorium, Packham Educational Memorial, Detroit.

Oct. 5-6 — Annual convention Tennessee Motor Transport Association, Andrew Jackson Hotel, Nashville, Tenn.

Oct. 5-15—Great Britain's first National Packaging Exhibition, Manchester, Eng.

Oct. 13-15—Southwest Warehousemen's & Transfermen's Assn. Conference, Baker Hotel, Mineral Wells, Texas.

Oct. 18-19—13th Annual Meeting, National Assn. of Shippers Advisory Boards, St. Louis.

Oct. 21-26—American Trucking Assns., Inc., annual convention, Statler Hotel, Boston.

Oct. 24-26—Associated Traffic Clubs of America, Shamrock Hotel, Houston.

Oct. 24-26—11th Annual Forum Packaging Institute, Hotel Commodore, New York.

Oct. 24-28—37th National Safety Congress and Exposition, Chicago.

Oct. 31-Nov. 2 — National Foreign Trade Convention sponsored by the National Foreign Trade Council.

Nov. 14-17—1949 National Beverage Exposition will be held under the auspices of the American Bottlers of Carbonated Beverages at Convention Hall, Detroit.

Jan. 16-19, 1950—First Plant Maintenance Show and Exposition, Cleveland Auditorium, Cleveland.

Jan. 22-27, 1950—National Furniture Warehousemen's Association, annual convention, Hotel Del Coronado, Coronado, Calif.

Jan. 24-28, 1950—18th Annual Convention, Mayflower Warehousemen's Assn., Hotel Biltmore, Palm Beach, Fla. Registration Jan. 23.

Jan. 27-31, 1950—Annual convention, Local Cartage National Conference, Cincinnati.

Jan. 30-Feb. 3, 1950—American Warehousemen's Association, Edgewater Beach Hotel, Chicago.

Jan. 31-Feb. 4, 1950—All-Industry Frozen Food Convention, Chicago, correlating with the 1950 Atlantic City convention.

Apr. 26-27, 1950—3rd Highway Transportation Congress, sponsored by the National Highway Users Conference, Hotel Mayflower, Washington, D. C.

June 12-16, 1950—Fourth National Materials Handling Exposition, International Amphitheatre, Chicago.

SITUATION WANTED

Warehouse sales and operating executive, extraordinary administrative knowledge, effective sales management. Fourteen years experience in industrial warehousing, transportation and distribution. Top contacts and proven ability in obtaining prime accounts. Interested in association in either managerial or sales capacity with five figure earning potentialities. Will travel or relocate.

Box P 766 c/o DISTRIBUTION AGE
100 East 42nd St., New York 17, N. Y.

OBITUARIES

Abraham Burkham, 46, president of Burkham Bros., a New York trucking firm, August 15. (Vitkauskas)

Ralph Cahouet, 54, general counsel for the New England Motor Rate Bureau and one of the nation's outstanding authorities in the field of transportation law. The greater part of his legal career was devoted to the problems confronting the trucking industry. Mr. Cahouet also was general counsel for the employers group of the Motor Freight Carriers of Boston.

William Elliston Farrell, 79, founder and chairman of the Easton Car & Construction Co., Easton, Pa., August 22. Mr. Farrell was an early pioneer in the field of industrial mechanized handling, and an international authority on the design and standardization of mine and industrial transportation equipment.

Percy Edward Haslett, 83, vice president of Haslett Warehouse Co., Oakland, Calif., August 25. Mr. Haslett was a member of the American Warehousemen's Assn.

Herbert J. Hufler, 61, traffic manager of the Milcor Steel Corp., Canton, Ohio, and Milwaukee, for 35 years.

Charles Richard Hulcher, 40, safety director of Shirks Motor Express Corp., Lancaster, Pa.

Arthur Garfield McKeever, 67, founder and owner of the Ajax Trucking Co., August 11. Mr. McKeever was a partner in Dane Trucking Co., Lowell, Mass., and a founder of the Merchant Truckmen's Bureau of New York, which later merged into the Motor Carrier Assn. of New York, of which he was president until 1946. He was one of the organizers of the American Trucking Assn., and also took the leadership in the organization of the Local Cartage National Conference of ATA in 1941, serving as its president until 1946.

Stanley A. Morrell, assistant traffic manager of motor transportation for the Barrett Division of Allied Chemical & Dye Corp., N. Y.

Harry C. Oliver, 62, president of the Harborside Warehouse Co., Jersey City, and former assistant vice president of the Pennsylvania Railroad in charge of traffic, September 5. Mr. Oliver was a member of the New York Railroad Club, the Traffic Club of New York and the Transportation Association of America. Mr. Oliver was also a member of the Union League Club, New York, and of the Duquesne and Traffic Clubs of Pittsburgh.

E. Richardson, traffic manager, Lever Bros., Cambridge, Mass., died suddenly September 9. He was formerly a member of the Traffic Club of New York.

Thomas J. Ryan, 61, general traffic manager of the Western Auto Supply Co. of Mo., August 26.

George M. Steinbrenner, 69, president of the Kinsman Transit Co., Cleveland, and veteran operator of ships on the Great Lakes, August 6.

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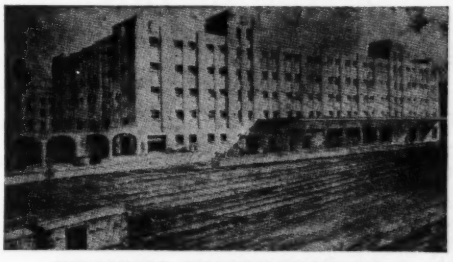

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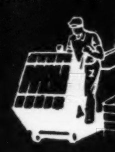

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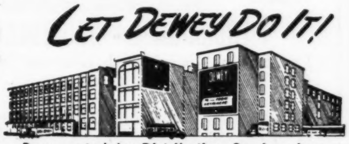

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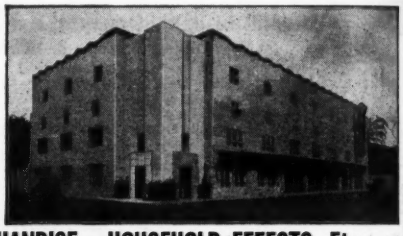

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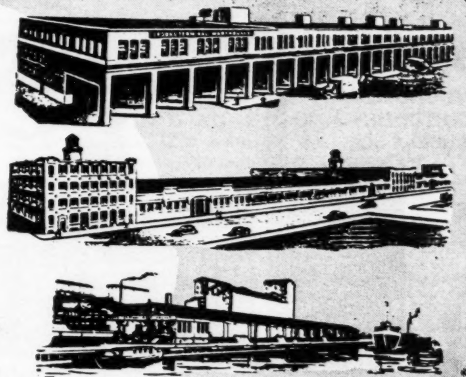

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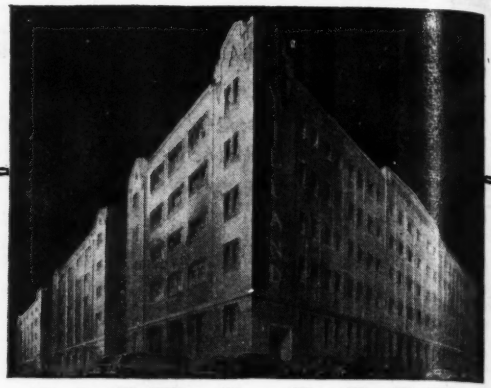

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A complete warehouse organization fully equipped to handle merchandise rapidly and economically with convenient locations for local trade and excellent transportation facilities for national distribution. Chicago Junction In and Outbound Union Freight Station —direct connections with thirty-eight railroads. Receiving Stations for Railroads, Express and Truck Lines on premises.

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All types of merchandise stored and distributed. Specializing in print paper.

Served direct by 4 railroads; Ill. Cent., Mich. Cent., C&NW and CB&Q, with free switch service from all other R.R. and boat lines entering Chicago.

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Merchandise & Household Goods Storage—Moving & Crating
45,000 Sq. Ft. • One Floor • Brick Construction • Sprinklered • Heated • Private Siding
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Free Switching by: CCC&St.L • Sante Fe • Illinois Central • Alton • Rock Island • Chicago & Illinois Midland • and P&PU Railroads

Arthur M. Marshall continues his discussion in November on "How to Distribute". In November, he dismisses class on his three-part study. Caps and gowns optional for reading.

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"Where Waterway . . . Railway . . . Highway Meet"

With the most modern and most unusual River-Rail-Truck Terminal and Warehouse in the United States. Sprinklered—A.D.T.

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Modern Brick Warehouse, Sprinklered 80,000 Square Feet. Siding on C. M. St. P. & P. Rd. Free Switching from Other Roads. Motor Freight Terminal.

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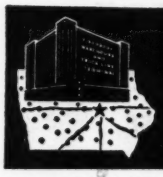

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Complete Facilities For Efficient Warehousing and Distribution of Merchandise

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Daily reports of shipments and attention to every detail

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222,000 sq. ft. of floor space in buildings of brick-concrete-steel construction. Chicago-Great Western R. R. siding with 10 car capacity. Free switching with Federal Barge Lines. Low insurance rates. Complete-Motor-Freight-Facilities. Pool car distribution—all kinds. Merchandise & Household Goods Storage, industrial and office space for rent.

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Household goods and merchandise storage.

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Complete Branch House Service
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Complete distribution and warehousing service
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An Able servant to the PORT OF NEW ORLEANS

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Operating Terminal Warehouses on Tracks of

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A. D. T. Private Watchman, Sprinkler
Storage—Distribution—Forwarding
Tobacco Inspection and Export—Low Insurance Rates
Consign Via Baltimore & Ohio Railroad

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A Household Name in Household Moving Since 1896

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Special Flat Bed Trucks for Lift Cases
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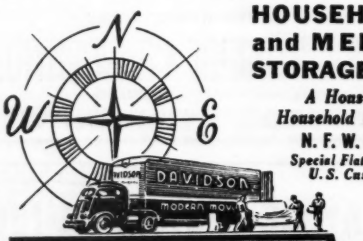

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See our advertisement on page 163—
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Established 1894

General Merchandise Warehouses

UNION WHARF, BOSTON 13

Connecting all railroads via Union Freight Railroad Co. A.D.T. Service Motor Truck Service

Member of Mass. W. A.

Standardized cost-finding methods, and standardized treatment of handling costs in warehouses, are important requirements if warehousing, particularly cold storage warehousing, is to create and retain customer good-will. D. Oliphant Haynes analyzes these problems in the November issue of Distribution Age.

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Wool, Cotton and General Merchandise
INDUSTRIAL SPACE FOR LEASE
IN UNITS TO SUIT TENANTS

LOCATION: Near but outside congested part of city. Obviates costly trucking delays. Overland express call.
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IN THE
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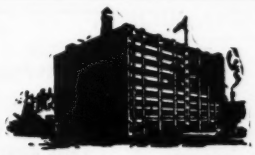
the Best is



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Furniture Storage Department
400,000 Sq. Ft.
SERVING NEW BEDFORD—CAPE COD—MARTHA'S VINEYARD—NANTUCKET
Since 1910

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385 LIBERTY ST., SPRINGFIELD 1
General Merchandise and Household Goods Storage. Cold Storage for Butter, Eggs, Poultry, Cheese, Meats and Citrus Fruits
B. & A. Sidings, and N. Y., N. H. & H. R. R and B. & M. R. R.
Daily Trucking Service to suburbs and towns within a radius of fifty miles.

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Members: NFWA—AWA—ACW—AVL Agents

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DIRECT TRUCK DISTRIBUTION throughout Connecticut, Massachusetts and Rhode Island
PRIVATE SIDING, main line New York Central Railroad
COMPLETELY EQUIPPED for all kinds of Rigging and Industrial Moving
U. S. BONDED CARRIER and WAREHOUSE OPERATIONS

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Bulk — Transit — Distribution
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Merchandise Storage—Pool Car Distribution
Fleet of Trucks for local delivery.
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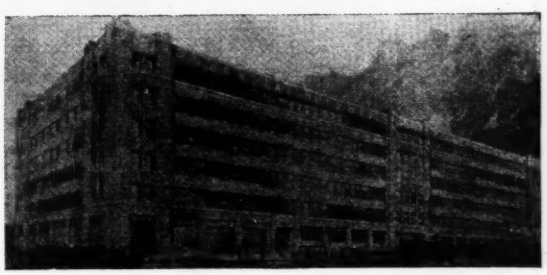

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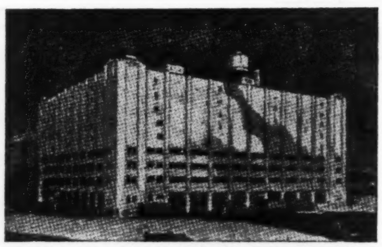

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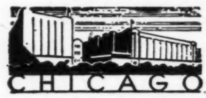

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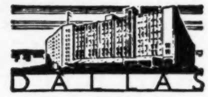

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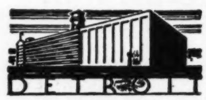

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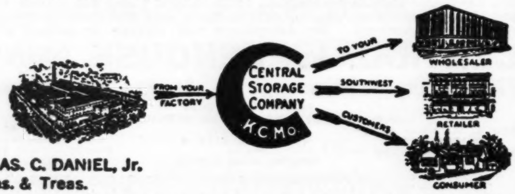

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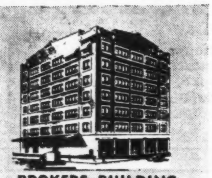

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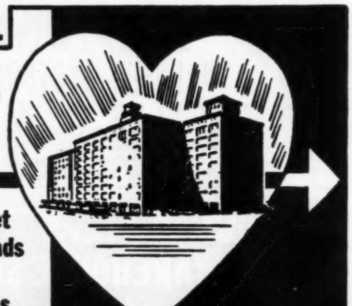

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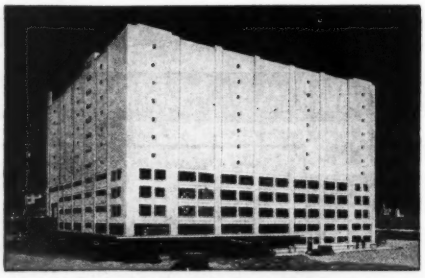

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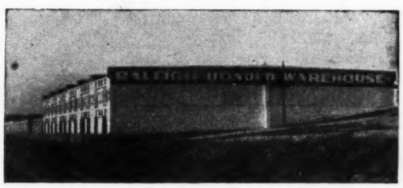

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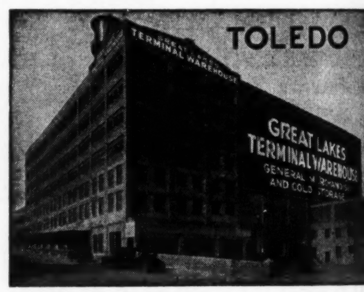

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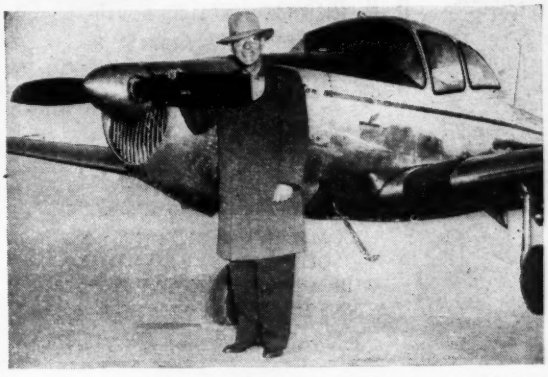

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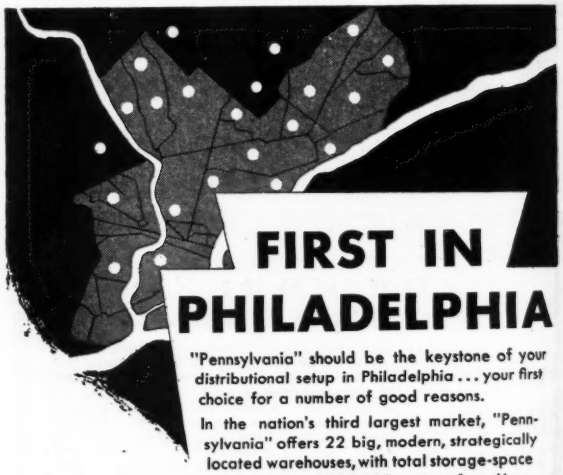

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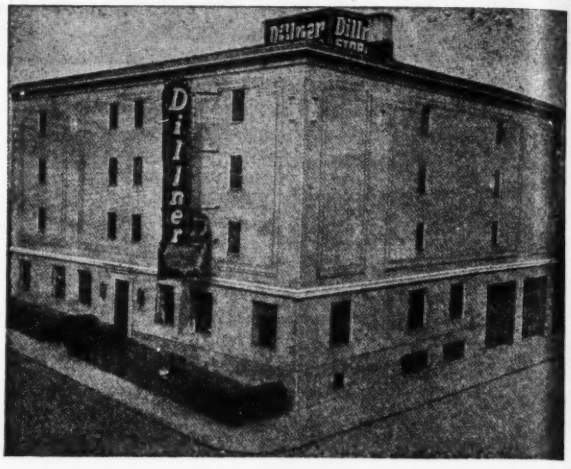

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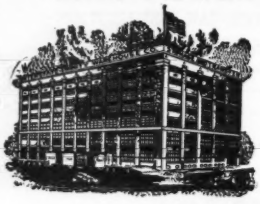

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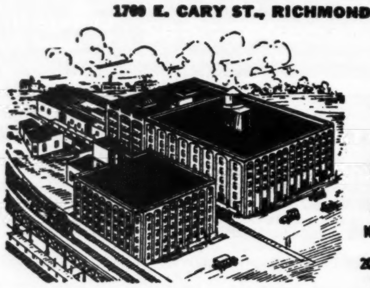

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INDEX TO GENERAL ADVERTISERS

Public warehouse advertisements start on page 81 and are arranged alphabetically by states, cities and firms

A

Air Express Div. of Railway Express Agency 45
American Airlines, Inc. 31
American Box Company 55
American District Telegraph Co. 63
Arkansas Pallet Corporation 69
Automatic Transportation Co. 6

B

Baker-Raulang Company 1
Beech Aircraft Corp. 11

C

Central Paper Company 69
Clark Industrial Truck Co., Div. Clark Equipment Co. 47

D

Darnell Corporation, Ltd. 57
Delta Air Lines, Inc. 9
Dravo Corporation 49

E

Eaton Manufacturing Co. 33
Electric Industrial Truck Association ... 4
Elwell-Parker Electric Co. 10

F

Fruehauf Trailer Company 12

G

GMC Truck & Coach Div. 7
Gerstenslager Company 5

H

Haiss Mfg. Co., Inc., Geo., Div. of Pettibone Mulliken Corp. 67
Harborside Warehouse Co. ...Third Cover
Honeyman Mfg. Co. 14
Hughes-Keenan Corporation 63
Hyster Company 16

I

International Harvester Co. 15
Island Equipment Corporation 66

M

Mobilift Corporation .....Back Cover

P

Port of Los Angeles 8

R

Rathborne Hair & Ridgway Co. 59
Ross Carrier Company 51

S

Silent Hoist & Crane Co. 65
Standard Conveyor Company 65
Sterling Lumber & Supply Co. 66
Stevens Appliance Truck Co. 61

T

Towmotor Corporation .....Second Cover
Trans World Airline 2

U

United Air Lines 37

W

Webb Company, Jervis B. 53

Y

Yale & Towne Manufacturing Co. 34

TRAFFIC

(*Continued from page* 30)

Individual air lines have conducted their own development programs on communications, weather, even radar. Aircraft manufacturers have given increased consideration to the all-weather flyability of their products. Post-war aircraft are better able to make their way from take-off to destination than were earlier planes in periods of unfavorable weather. As just one example of the above statement, American Airlines recently announced that it is ready to buy and install on its planes a radar set which it has developed from a wartime radar equipment. This airborne radar can "see" rain storms, hail, rough air, etc. — all-weather obstacles to on-time flight. The big problem is that of finding a manufacturer to construct the radar sets it wants.

Boeing Stratocruisers, Douglas DC-6s and other modern, post-war aircraft have been built to climb above weather on long flights — a problem which is not so easily solved for short-hop passenger or tramp - freighter flights. Special freight planes are available when operators can afford to buy them; these too will be able to cope with all but the worst of weather.

All in all, then, the air transport all-weather outlook appears to be improving as we enter the fifth post-war year. Progress in reliability, in passenger and freight loads, in integrated air-route system development has been made. The scientists have planned their campaign against weather, and the first campaigns in the all-out onslaught are even now being fought in America's research laboratories.

RTCA

Organizations included in Radio Technical Commission for Aeronautics—Special Committee 31: Department of State; Treasury Department (U. S. Coast Guard); Department of the Air Force; Department of the Navy; Civil Aeronautics Administration; Civil Aeronautics Board; Air Line Pilots Association; Federal Communications Commission; Aircraft Owners and Pilots Association; Radio Manufacturers Association; Air Transport Association of America; and Aeronautical Radio, Inc. We are indebted to United Air Lines for this listing.

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For full facts and descriptive folder about Harborside, write, wire, or telephone Leo J. Fisher, Vice-President.

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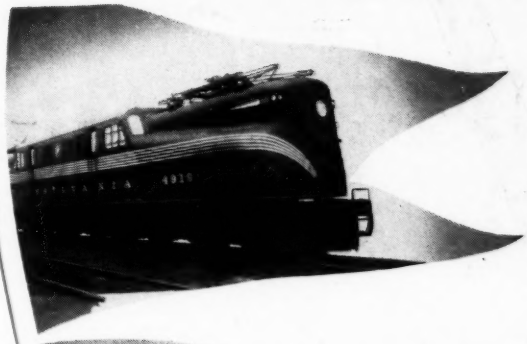

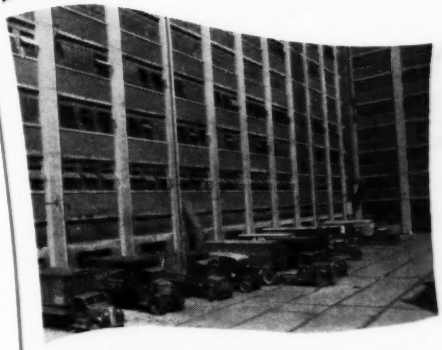

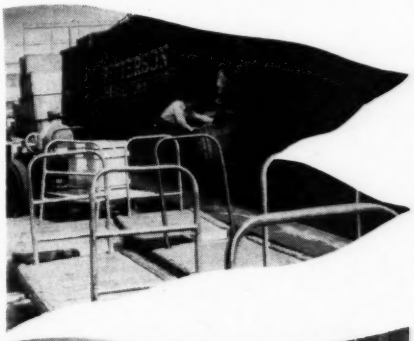

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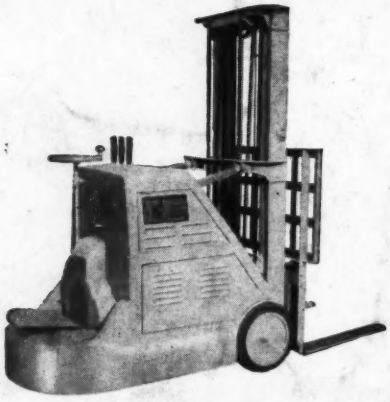
MOBILIFT *Saves on every load*



It is surprising how many well-equipped modern plants still cling to wasteful hand truck methods for moving materials. Every year hundreds of these plants become "Mobilized"—always with the same result. When Mobilift goes to work executives are amazed at the permanent economies which show up.

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